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by Chief Mjr Armd Trps P. ROTMISTROV

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The remarkable accomplishments of our socialist state in the field of science and technology and the rapid growth of the economy have made it possible to make drastic transformations in the technical equipment of the Armed Forces. Nuclear-rocket weapons have become a decisive factor in armed conflict. Scientific and technical progress has changed the character of war and the internal make-up of every branch of the Armed Forces, their organization, combat missions, and ways of carrying them out. A number of important tenets of Soviet military science and military art have also been given new content. One of the fundamental problems of modern military affairs -- the automation of processes of controlling weapons and troops -- is being successfully solved. The character of modern war and the supply of troops with complex military equipment call for a sharp improvement of the military and general scientific and technical preparedness of command personnel of the Armed Forces.

The number of engineers in the Armed Forces has increased significantly in connection with the steady growth and increased complexity of military equipment. To direct these engineers successfully and assign missions to them correctly, the commander himself must possess the necessary amount of technical knowledge.

It should be noted that command cadres, knowing thoroughly the nature of modern combat and the capabilities of new weapons, possessing good general scientific and technical preparation, and using modern mathematical methods of research and electronic computers, already have the ability to control combat and operations on the level of modern demands.

At present the trend in the development of military equipment is away from various types of independently operating equipment toward semi-automatic and automatic complexes, both in combat equipment and troop control. In this connection, the necessity of improving the general scientific and technical preparedness of both command and engineer cadres has been clearly determined. This is very important: the general mechanization of the army and the automation of weapons and means of troop control do not replace man but, on the contrary, increase his role in the control of these weapons. Modern armament in the form of semi-automatic and automatic complexes must be maintained by crews, and the unskillful actions of one member of a crew may result in failure to fulfill an assignment or cause the entire complex to malfunction. Actual combat conditions require that each fighting man in a crew, whether a sergeant or officer, be ready to replace one or perhaps several of his comrades.

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In preparing military cadres, including young military specialists, it is necessary not only to consider present-day requirements, but to see ahead into the future. Rapidly developing physics, chemistry, radioengineering, bionics, astronautics, cybernetics, and other sciences may produce in the near future discoveries which will lead to the creation of even more highly perfected combat equipment. Already modern power plants and engines are opening new possibilities in the construction of military structures and armaments. Take, for example, work in creating armament based on quantum generators. According to foreign press information, it has already passed from the laboratory stage to the development of actual types of military equipment. There are other real results in other fields of science and design.

Generals and officers must have, in addition to a good knowledge of modern equipment in their specialty, a wide general military-scientific and military-technical background. But at the same time we believe that there should be some sort of optimum limit in the training of senior officers. As for enlisted men and junior officers, it is completely logical that training them in a narrow specialty such as the use of modern weapons requires, first of all, an excellent knowledge of actual types of military equipment. This does not, of course, exclude the necessity of training them in related specialties. Thus, preparation for defense of the country presents new demands both in the mass character of training personnel of the armed forces and in the volume and level of knowledge.

In postwar years our armed forces successfully underwent an organizational and technical reconstruction. In a short time the newly established rocket troops and reorganized air defense troops mastered complex equipment and became highly combat ready. This was made possible not only by the training of specialists of a broad profile in our military educational institutions, but by the fact that at that time we had good specialists of a narrow profile. At present our command and engineer-technical personnel, having a good general development and comprehensive technical preparation, can independently and quickly cope with military and technical problems of any difficulty. Therefore, in the future military educational institutions will be oriented to training specialists in specific fields on the basis of broad general scientific and technical training.

Specialists presently being graduated from higher and secondary military institutions have good political, military, general scientific, and special technical training. They not only maintain the high combat readiness of chastí and podrazdeleniya but, possessing knowledge of the latest accomplishments of military art and scientific methods of employing armaments and military equipment, make it possible to raise the military and technical culture of the army to an even higher level. Our military cadres, completely devoted to their Fatherland and the Communist Party and performing their military duties in an exemplary fashion, are mastering the art of organizing and directing modern military operations and skillfully conducting the political and combat training of personnel.

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However, no matter how much we have accomplished, an awareness of the responsibility for the combat capability of our Armed Forces impels us to seek new ways of improving the training and education of command and enlisted personnel, taking into account the progress of science and technology in all areas. Our armed forces and military educational institutions are now receiving better educated, more cultured and inquisitive youths having a broader technical background. This makes greater demands not only on education but on training and makes it necessary to find ways of improving the entire educational and training process in military academies and schools.

An analysis of the training of officer cadres shows that sometimes the measures adopted over a number of years for improving the programs, plans, and methods of training have not produced the desired results.

The rapid growth of science and technology have made it necessary to include completely new subjects in the programs of higher military educational institutions and to broaden the traditional "old" disciplines. As a result, a conflict has arisen between the ever increasing amount of knowledge which must be taught and the amount of training time.

Increasing the amount of training time is not expedient; it does not help to improve the system of education, or at best gives only temporary successes, since the growth of military theory and military technology continues without interruption and at an increasing rate while the amount of training time has its practical limit. Moreover, the training period of specialists is already too long. The Central Committee CPSU and the Council of Ministers USSR, in its decree of 21 May 1964, pointed out the necessity of shortening the training period of specialists with higher and secondary special education.

The way out of this complicated situation can be found in the search for more rational ways of organizing the training process and especially its scientific planning. The fact is that in drawing up a training program for 3, 4, or 5 years, depending on the training period of the higher military educational institution, it is necessary to plan the training process with regard to the demands which science and technology may create during that period. To draw up a training program and plan a training process from the position of the past is to fall hopelessly behind and to prepare specialists for past, rather than future equipment and armament. If the training plans and programs are drawn up on a scientific basis, there will be fewer mistakes and deficiencies. A scientific prognosis of the training process can be of real help in solving this extremely complicated problem.

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Attempts to make scientific prognoses of training programs have been made in a number of higher military educational institutions. The minimum amount of knowledge which graduates must have, i.e. what must be taught and in what quantity, is determined for each specialty. Having determined this amount of knowledge, it is not difficult to determine the training disciplines to be mastered and, having worked out the basis of the courses, to determine the profile and auxiliary disciplines and their dependence on each other.

This method of planning the training process makes it possible to correct existing courses and disciplines and redistribute material among them, eliminate certain courses, introduce new disciplines or combine existing ones, ensure the logical sequence of courses and their precise interrelationship, and completely eliminate duplication and repetition.

Through a prognosis of the training process it is possible to subject the entire system of training students and officer candidates to analysis and create a scientific basis for revising the training plan.

Good progress in this area has been made at the Higher Naval Radio-electronics School imeni A. S. POPOV, where logical plans for individual disciplines and courses as well as structural diagrams of the entire training program have been worked out. The work of the school in this area deserves attention.

The scientific method of prognosis makes it possible to plan the training process for 3-5 years on a scientific basis and reduce to a minimum deficiencies in training plans and programs.

In recent years research in the field of methods of instruction in conformity with accepted laws concerning the relation of a school to life has determined that the basic principle of the method of training in higher educational institutions is the reinforcement of theoretical knowledge in practical laboratory exercises and the wide use of visual methods in teaching and studying equipment, not only in an assembly where the composition of a certain unit or machine is visible as a whole, but also in individual assemblies. Training experience in leading higher educational institutions has shown that only by using this method can a thorough mastery of the various disciplines be assured. One way of improving training may be the use of programmed training methods for a number of subjects.

Much has already been written about programmed training in periodicals, including the journal Voyennaya Mysl', and it has been discussed at various conferences; but it should be noted that even fundamental questions concerning the realization of the idea of programmed training are still not sufficiently clear.

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The general concept of programed training is of great importance for improving the training process both in military higher educational institutions and in field units, but it is not some sort of unusual thesis or sensational discovery. Programed training makes it possible to establish such control over the entire training process that an instructor can know at any minute how each student is learning the training material, i.e. whether he is forming correct ideas concerning the information received, whether he correctly understands the meaning, thesis, and conclusions, whether he is able to use what he has learned in mastering subsequent training information and solving concrete theoretical and practical problems. This enables the instructor to know what changes to make in the training process and when to make them so that the knowledge and skills of the student will be guided in the necessary direction and produce the best results. Effective control of the training process requires not only direct communication (the process of presenting the training information to the trainee), but also feedback in the training process -- control over the trainees learning process.

In programed training, control, or rather self-control, is supposedly exercised after each dose of training material (a paragraph, part of a chapter, etc.). Depending on his answer, the student will be instructed to proceed to the next dose or return to supplementary explanatory material of which he will have to confirm his knowledge with answers to questions. Thus, in programed training both the content and the training process are planned (programmed).

It is common knowledge that in existing traditional training the training process is planned in a careful manner: training plans are drawn up and discussed again by the chairs and councils of higher military educational institutions, and then reviewed and approved by the appropriate chiefs. In addition, each instructor, in preparing for lessons, draws up texts and tries to foresee his own activity and that of his students, and strives to create the best communication with his students. This way of planning the training process will undoubtedly be retained in the future, but, in our opinion, the prognosis of the training process mentioned above must now be introduced into this planning.

Since the amount and complexity of training material is increasing each year and the number of students is also growing, the problem of effectiveness of the training process is becoming more important. The accomplishments of modern science, especially radioelectronics and cybernetics, are exerting a positive influence on the improvement of training methods and on the theory of pedagogy in general. Existing systems and methods of training are being improved on the basis of new approaches to certain training processes and with the appearance of new technical means.

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However, ways of further improving the training process can be correctly determined only by the thoughtful analysis of existing methods and new methods of training and not by discarding proven methods.

Unfortunately, because of unwarranted haste in adopting primitive technical devices in certain educational institutions and units, programmed training was reduced to checking knowledge by having students select the most correct of several responses. It is perfectly understandable that in connection with such a superficial approach to this new method the very idea of programmed training is often received with reservations and sometimes encounters opposition.

Abstract, overenthusiastic articles and speeches about the considerable accomplishments supposedly already achieved in programmed training and an uncritical approach to every kind of translated articles from foreign, especially American, literature has led certain comrades to the other extreme -- to the overevaluation of the potential of programmed training and to the loss of the feeling of reality in the solution of this complex and important question. Greatly exaggerating the possibilities of mathematics, cybernetics, and electronic equipment in training, these comrades think that man's mental processes can be controlled in the same way as physical and chemical processes, by translating them into the language of mathematical formulas, and that all that is needed is to build the necessary technical means. For example, T. ROSTUNOV, in his book Programed Training and the Automation of the Training Process, writes that "the contemporary development of equipment is making it possible to create various means of automation which permit the automation of all aspects (underlined by me - P. R.) of the training process, from entrance examinations to final examinations and the planning of the training process." According to the author, "The training process... to a large degree flows spontaneously, subject only to certain general requirements," and "psychology and pedagogy... at present do not make any real contribution to the development of the theory of training." Discarding pedagogy with surprising ease, T. RUSTUNOV advocates the creation of "a special theory of training" using the achievements of mathematics, cybernetics and other exact sciences and relegating pedagogy to a role subordinate to this far-fetched "special theory." In the book there are other statements and recommendations boasting of "teaching machines" and "programed classes" which for the most part are far from perfect and based on the method of selecting responses. Experience shows that in a number of cases conducting lessons in such classes does not improve the training process but actually weakens it.

It is understandable that the manuscript of one of the first books on programed training might contain a number of erroneous statements, but its publication in large numbers without proper review and editing is, in our opinion, unwarranted.

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Placing programed training in opposition to existing traditional systems and methods of training should be regarded as incorrect and erroneous, as should proposals to immediately go over to the wide-scale implementation of programed training in all military units and educational institutions.

The existing system of training undoubtedly needs to be improved, but it has proven itself over a period of many decades. In our educational institutions, including military schools, students are acquiring scientific knowledge and skills which enable them to work efficiently in their fields, and many develop, on the basis of this knowledge, into outstanding scientists and engineers who bring glory to our native land with their achievements in fields of science and technology.

The problem of improving training cannot be solved only from the standpoint of improving the conditions of the training process, disregarding a fundamental principle in the Soviet educational process -- the inseparable unity of training and education. Unfortunately, certain comrades do not consider these requirements; consequently, there is a one-sided and erroneous "technical" approach to this important problem in which the training process is examined from the standpoint of random processes and the teacher and student are considered as links of a system in which there take place various activities connected with the process of transmitting, processing, and storing information written in mathematical equations with which control over the training process will supposedly be maintained. From this, surprisingly, came approval of the replacement of instructors with "teaching machines," the automation of the entire training process, and the individualization of training in the form of "independent training" with the aid of programed text books or teaching machines on prepared texts, in which the quality of learning is determined by the student's ability to select the correct answer from four or five choices. Some seriously claim that this "individualization" enables each student "to progress according to his ability and to complete courses of study in different periods of time." These comrades are forgetting that the mission of Soviet training schools is not merely the transmission of knowledge gathered from propositions, facts, figures, etc., but the comprehensive training of Soviet specialists, the education of students in accordance with the requirements of Soviet ideology and communist morality. The problem of improving training in military educational institutions and units must be approached from this standpoint.

Science has a great educational capacity; it forms a correct system of ~~Approved For Release 2000/08/09 : CIA-RDP85T00875R000300090002-4~~ ~~of appropriate reason, and promotes education based on firm con-~~ victions, and the authenticity, usefulness and necessity of knowledge received for the performance of military duties and a consciousness of the rightness and inevitability of the triumph of communism. But the educational importance of training is not limited to the influence of science; it is important how the student goes from ignorance to knowledge, i.e. the very organization of the acquisition of knowledge, the method of training. In one case this may be training based on demonstrations, the analysis of facts, the determination of cause-effect relationships, and the discovery of inner connections, relationships, and generalizations. Such training leads the student to an understanding of the correctness of the conclusions of science and develops the mind and capacity for logical reasoning and practical thought. Correctly organized training disciplines students, develops determination and stability in overcoming hardships and in seeing tasks through to their completion, encourages initiative, and accustoms them to working under difficult conditions. On the other hand there is the statement of truths without substantiations and demonstrations, based on examples and elaborations which have been prepared in advance and from which no deviation is permitted during the course of study and barring attempts to solve problems independently, in one's own way, without prompting and instructions. This method of training does not develop a student's capacity for logical thought, analysis, and critical evaluation but weakens his will and initiative and leads to dogmatism.

In principle, of course, training material can be prepared in any degree of complexity and according to any method and style of exposition and presented to students in various ways: by the instructor himself (lectures, exercises, consultations, direction of laboratory work); through textbooks, synopses of lectures, and other printed materials; or with the help of technical means (film projectors, television, tape recorders, slide projectors, trainers, etc.). But in the training process we must carry out the tasks of educating well-rounded men who are able to correctly construct their speech and express themselves orally. By improving a student's speech we develop his thinking ability, for speech is an important element of thought. An instructor must always express himself clearly, remembering that one can correctly explain only that which he knows well. By helping a student to express his thoughts clearly and accurately we are teaching him to overcome real difficulties in mental work; we are teaching him to think.

This is especially important for officers, who are both commanders and educators of their subordinates. Commanders must express their thoughts clearly and accurately, be able to speak fervently, passionately, and convincingly, and formulate an order logically, concisely, and clearly. Therefore, the role of the instructor in training and education can not be disregarded. It was for this reason that Mar SU R. Ye. MALINOVSKIY, Minister of Defense USSR, considered it necessary to mention the fact that while our higher military educational institutions are developing scientifically based principles and methods of evaluating the effectiveness of programmed training systems, primary attention is being given to the creation of a large collection of technical devices which are sometimes primitive, unnecessary, or already developed in other educational institutions or units.

The unfounded use of these devices, most of which are designed for the selection of suggested responses, harbors the danger of "coaching" in training and lowering the role of professors and instructors, especially in the study of operational-tactical disciplines and social sciences. Excessive haste in introducing certain training methods and technical devices into the training process without thorough experimental checks can weaken the training and education of students and officer candidates. The Minister of Defense instructed military educational institutions to continue research with comprehensive pedagogical experiments as a means of determining what is true and useful and what is erroneous and to improve the scientific theory and methodology of training on that basis; to conduct special conferences on scientific methodology in 1965 for discussing the results of research in this field and drawing up recommendations for the introduction of programmed training into the training process.

In our higher military educational institutions, instructors, professors, engineers, and technicians will undoubtedly be called on to work out questions of theory and the technical support of programmed training, which is one method of developing and improving training methodology in these institutions. The organization and guidance of research work in this field must be examined and made more concrete and purposeful. To eliminate parallelism and duplication and to ensure the inclusion of all important objectives and common views and methods of research, this work must be planned and coordinated on an Armed Forces scale. To do this it is necessary to first determine the criteria for evaluating methods and technical devices and to develop common mathematical methods of processing statistical materials. In a number of cases in the past, experiments in this area were conducted hastily from the standpoint of methodology; the collection of large quantities of statistical material did not always prove useful; the work of many instructors and engineers was used irrationally; and discussions of the advantages and disadvantages of programmed training were in some cases unfounded. For example, certain comrades carried

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individualization of training to the point where students studied disciplines at a pace corresponding to his individual capabilities and each student could complete the course of study in a shorter period of time than that prescribed in training plans. Thus, the time a student would spend in a higher educational institution would depend on his ability. But since in a given case lectures read according to a schedule would hold back the disorderly movement of students toward graduation day, the authors of these far-fetched proposals recommended replacing lectures and other group exercises with independent, individual study of training disciplines with the help of "programed textbooks" and "teaching machines," leaving instructors on the staff only for consultation.

In our opinion, such views on the training of military cadres are simply unacceptable. They do not take into account the specific character of teaching officers staff work, joint, coordinated activity during troop operations, and the necessity of studying modern weapons and their combat use and maintenance. These elements must be learned in higher military educational institutions since they represent the logical completion of training, the final forming of a future specialist, and they require group exercises.

It should also be remembered that the mental quality of an individual can fruitfully developed only in a collective, in the process of social life. Owing to these conditions the individual is developed as a full-fledged personality.

Programed training has many good, positive aspects. It increases the time for independent work by the student; he will acquire many skills in working with books and scientific literature; but at the same time he will have less contact with his instructor. It is not surprising that a number of comrades express apprehension. Won't the intellectual world of a man be impoverished by these new methods of training? Is it right to change over to industrial methods of automation in all fields of training? In connection with this problem a scientific basis for the amount and quality of information which a student can grasp is needed. The limited memory capacity of the human brain must, of course, be considered, as must the fact that without knowledge of certain facts, information, and figures an officer can not perform his service duties. When conducting research on this problem, it is important to remember the words of V. I. Lenin at the Third All-Russian Congress of the Russian Communist Youth Union: "We do not need cramming, but we do need to develop and improve the memory of each student with knowledge of basic facts, for communism will become empty, a meaningless sign, and a communist will be only a simple braggart unless all knowledge received is digested in his consciousness. You must not only learn these facts but regard them critically so that you do not burden your mind with unnecessary rubbish, but enrich your knowledge with those facts without which there cannot be...an educated man."

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In order that programed training facilitate the development of the capacity for creative thought, it is necessary to determine what demands should be made of technical means during training. Theoretical training and all technical equipment of the training process must promote, first of all, the development of man's mental capabilities, i.e. the development of such positive qualities as good judgement, flexibility, breadth, depth, and speed of thought, the ability to analyze developments and overcome negative thought qualities: dullness, banality, narrow-mindedness, and sluggishness.

In developing new methods and forms of training it is important to take into account the fact that an officer in a military educational institution must acquire knowledge not only in the field of theory, but must study and learn to use military equipment. The accomplishment of this task requires close ties between theory and practice. For example, new trainers based on the principles of cybernetics, which react to each incorrect action of the student, indicate the nature and reason for his mistakes, and prompt him in performing the operation correctly, can be very useful in studying questions of the maintenance of military equipment and armament. However, in the study of military equipment it is hardly expedient in all instances to place between the student and the assembly being studied an intermediate device which at best teaches only the nomenclature of the parts but does not facilitate the acquisition of knowledge concerning the shape of the parts, the location and function of a unit, or the interrelation and operating conditions of parts in the assembly.

All these questions require accurate, scientifically valid answers, and scientific correlation of experience and theoretical bases. The development of new training methods requires a correct understanding of the psychological nature of training; rational methods can be developed only on correct theoretical bases. Therefore, the first task of higher military educational institutions is to develop the theoretical bases of training and to test them with pedagogical experiments, proceeding from a dialectical-materialistic understanding of the training process and from the goals and missions of our schools, which are called upon not only to arm students with knowledge and skills, but to develop their abilities and educate them as citizens of a communist society.

by Maj Gen Justice I. POBEZHIMOV and
Col Justice P. ROMANOV

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The structure of the Armed Forces embraces a wide range of problems and is determined by factors of an economic, socio-political, scientific-technical, and organizational nature. Since the army is not only a military organization, but also one based on state law, problems of organization and law are of considerable importance. These problems are formulated and worked out in detail in close coordination with party instructions, which were stated in the recent decree of the Central Committee of CPSU, "On Measures for the Further Development of Juridical Science and for the Improvement of Juridical Education in the Country." Soviet juridical science is faced with the task of studying and analyzing the scientific principles of state administration and legal control of public relations, which subject is directly related to the problem discussed in this article.

The Soviet Constitution and all Soviet laws, including military regulations, consolidate the organizational and legal principles of military structure in the form of universally compulsory instructions.

The organization of the army and all of its activities are determined by the state system, by the social and economic structure of society, and by the state policies, all of which leave their imprint on the whole order of internal relations in the army, on its legal position and functions within the state apparatus, on methods of army administration and control, methods of staffing, military training of citizens, the character of discipline, etc.

At the same time the army, as a separate organism which has the purpose of conducting military operations, has its own internal structure, which is determined mainly by the nature of modern weapons and military technology, and by the degree of development of military art.

In working out certain problems of military structure, all aspects of military organizational activities are taken into consideration and the data and methods of corresponding sciences, i.e., social, military, technical, and other sciences, are utilized. For example, in studying the general principles relating to the organizational and legal bases of military structure and their relation to general principles of Soviet state structure, the data and methods of legal sciences are utilized. In working out the organizational structure of army soyedineniya and chasty, the determining role belongs to military art.

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In addition to the social-political and legal aspects of the structure of USSR Armed Forces are of considerable importance in military matters. This includes the organization of the Armed Forces, the system and methods of staffing, service relations among military personnel, education and military discipline, military control, and others. (P. KUROCHKIN, Problems of Military Administration in Light of Present Requirements, Voyennaya Mysl', No 9, 1962, pages 24-26)

It is not possible to discuss all problems pertaining to organizational and legal principles of the structure of USSR Armed Forces within the scope of a magazine article; therefore, we shall dwell only on those aspects which we consider the most important.

* * *

V. I. Lenin stated that war is part of a whole, and that the whole is politics (Collection of Lenin's Works, XII, page 433). The military organization of a country is indissolubly connected with its social and state system, and with the class nature and type of state, of which the Armed Forces are an instrument (V. I. Lenin. Works, Vol. 8, page 36; Vol. 24, 364).

Military organization, as a sphere of state activities, is subordinated to state politics and based on principles which are determined mainly by the social and economic character of the state, while the organizational forms of Armed Forces, methods of staffing, and methods of military administration and training, are closely connected with the character of the state system of a certain country.

In imperialist countries, which are characterized by their exploiting nature, the army not only fails to be under the workers' control, but on the contrary, serves as a tool of subjection and suppression of working people by the ruling class of exploiters. The bourgeoisie constantly fears the prospect of losing control over the Armed Forces, one of the principal strongholds of its rule. Therefore, the bourgeoisie actually, and sometimes even juridically, eliminates the possibility of any important control over the army by representative organs of state power, i.e. parliaments, where democratic forces which are undesirable to the imperialist bourgeoisie may predominate in the course of the intensifying class struggle. The actual military power is concentrated entirely in the hands of executive state organs.

Our military structure differs radically from the military structure in capitalist countries. V. I. Lenin noted that "the experience gained by the Soviet government in the sphere of military organization cannot be

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regarded as an isolated fact. The statement that the Soviet state can produce successful results only because it was accomplished in the spirit of general Soviet building and on the basis of class relationships, which influence any sphere of building." (Works, Vol. 30, page 285).

This statement by Lenin leads to the following conclusions:

1. The principles of Soviet state structure and the principles of military structure are the same to the extent that they are determined by the social and economic nature of the Soviet state; 2. The application of socialist principles of state structure to military structure has a positive influence on the strengthening of combat power of the Armed Forces.

In supervising the structure of the USSR Armed Forces, consistent use is made of the Leninist principle concerning wide participation of workers' masses in all activities of the Soviet state for the strengthening of the country's defense capabilities. The Soviet people, inspired and led by the Communist Party, are the decisive force in strengthening the defense capability of the Soviet state and they participate actively and directly in the building of the Soviet Armed Forces. This participation has various forms.

The people exert an enormous influence on the development of all military matters as a whole, mainly by the fact that they are the principal force of socialist production, which fulfills the material requirements of the front and rear services and creates the military-economic power of the country. The role of economics grows with the development of military technology, and so does the role of the workers. This applies not only to those who, by their labor, provide the Army and Navy with material and technical equipment, but also to scientists, engineers, and workers, who create new types of equipment and weapons, thus contributing to important changes in the methods of warfare. As a result of the constant concern of the party and government and the selfless efforts of Soviet scientists, designers, engineers, and workers, the Armed Forces are equipped with all types of modern combat equipment, including powerful nuclear weapons and improved types of carriers for these weapons, i.e., rockets of all classes.

The efforts of workers, engineers, and scientists in the Soviet Union have created and helped to develop a special metallurgy, precision instrument building, production of means of automation, atomic, rocket, and electronic industry, modern aircraft construction, and shipbuilding. These branches of industry serve primarily peaceful purposes, i.e. the building of the Communist society. However, in case of necessity, they can be converted to the production of modern types of armament.

The participation of workers' masses in Soviet military structure is confirmed by their honored, constitutional duty to defend their socialist fatherland and to perform military service in the ranks of the USSR Armed Forces (Articles 132 and 133 of the USSR Constitution), as well as by their

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right to unite for the purpose of developing independent organizational activities and political activities of people's masses and to form public, including defense, organizations (Article 126 of the USSR Constitution).

The Soviet Constitution states that the workers' masses, through the higher organs of state power, exercise control and supervision over the structure of the Armed Forces (Articles 1 Par. 3, 14, 18-b, 49, and 60 "e"; Par. 68 "d"). The executive and administrative organs of state power, from the highest to the local level, which directly perform certain administrative functions in the sphere of national defense, operate strictly on the basis of and in compliance with law, and they are completely accountable to and under the control of the corresponding representative organs of state power, i.e., the soviets of workers' deputies.

The principle of national equality of rights for all peoples of the USSR is consistently applied to the supervision of Soviet military structure. This principle is also substantiated in the USSR Constitution (Article 123). The Leninist national policy is one of the bases for the structure of the Soviet Armed Forces, which are called upon to defend the socialist achievements of all peoples of the USSR.

The Communist Party guides the Soviet state structure along the line of inviting the participation of workers of all nations in all spheres of activities pertaining to this structure. The national military structure is one of the forms of participation of workers of all nations in the Soviet Union in the strengthening of its defense capability.

The principle of political and civil equality of servicemen is applied to the structure of the Soviet Armed Forces in a consistent manner. Several thousand servicemen are deputies to the Supreme Soviet USSR, to supreme soviets of union and autonomous republics, and to local soviets of workers' deputies. Together with other representatives of the working people, they participate actively in the administration of the Soviet state, whereas the whole bourgeois military system is directed toward the isolation of soldiers from public and political life and toward transformation of the army into a blind tool for carrying out the reactionary plans of imperialists.

An essential difference between the socialist and the bourgeois military organizations is evident in their solution of the problem of correlation between military necessity and legality.

This problem is resolved in a comprehensive manner in the works of Lenin and in the decisions of the CPSU. According to V. I. Lenin, the significance of legality does not diminish during the period of war; on the contrary, it grows more important. The extraordinary circumstances during war cannot justify any deviation from Soviet laws. On the contrary, these circumstances must be accompanied by a marked increase in discipline and legality in the work of all government establishments and organizations,

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officials, and citizens, including all Army and Navy organizations, with no exceptions whatsoever. Strict compliance with Soviet laws during peace and war is one of the important conditions for the strengthening of discipline and the increase of combat power of the Soviet Armed Forces.

Communist Party leadership is the main foundation of Soviet military structure and the principal source of victories gained by the Soviet Armed Forces. During the period of building Communism, the role of the CPSU in supervising state and public organizations, and military organs, has acquired more importance. The policies and directives of the Communist Party, and the decrees of the Central Committee of the party concerning military structure, represent the ideological and theoretical basis of Soviet military legislation.

The policies of the CPSU include decisions on all important matters pertaining to the structure of the Soviet Armed Forces and the preparation of the country for defense, in complete accordance with the instruction of the party Central Committee that "the policies of a military department, as of all other departments and establishments, are carried out on the firm basis of general directives issued by the party through its Central Committee and under the direct control of the Central Committee." (KPSS o Vooruzhennykh Silakh Sovetskogo Soyuza, the CPSU on the Armed Forces of the Soviet Union. Collection of Documents 1917-1958, Gospolitizdat, 1958, page 47). A clear expression of the party's concern for the further strengthening of the Soviet Armed Forces was the decree of the October 1957 Plenum of the Central Committee CPSU "Concerning the Improvement of Party-Political Work in the Soviet Army and Navy."

The problem of troop control occupies a special place in the comprehensive process of building the Soviet Armed Forces. Upon the method used as a basis depends, the structure of the army as a strictly centralized military organism, the unity of education and training of soldiers, the state of organization and discipline of personnel, and finally, the high combat readiness and combat capability of troops.

The organs of Soviet military administration are charged with providing for high and constant combat readiness of troops, speedy mobilization of the Armed Forces, and a correct and most expedient combat utilization of troops. In view of the special system of performing military service, and the specific purpose and organization of the Armed Forces, their administration has essential features differing from other branches of the government. Mar SU R. Ya. MALINOVSKIY stated: "Military organization is a manysided process. Therefore, its principles cannot be set up in a row, as it is often done in our literature. In our opinion, it would be more correct to separate them into political and organizational principles in the training and education of troops." (R. Ya. MALINOVSKIY, Bditel'no stoyat' na strazhe mira, Guard the Peace Vigilantly, Voenizdat, 1962, page 33). The organizational

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principles, by their nature, are confirmed by law. Therefore, in our opinion, we may speak of organizational-legal principles in the structure of the USSR Armed Forces.

Centralization of leadership, one-man command, and military discipline are the basic organizational-legal principles of Soviet military structure. These principles are most characteristic for the specific nature of military administration and point up its difference from other branches of the Soviet state administration. The need for centralization in military administration, as well as the need for one-man command and strict military discipline, derive from the specific nature of the Armed Forces, which have the purpose of conducting victorious armed combat, requiring a maximum coordination of will and action, the highest degree of organization, coordination, and flexibility of all parts of the military mechanism.

The centralization of leadership of the Armed Forces, as a form of military administration, enables the concentration in central military organs of all functions of general leadership, control and guidance of activities of the entire military administration apparatus on all levels; establishment of a supreme command which is common to all branches of the Armed Forces; the unconditional binding force of legal acts issued by higher organs for lower organs, and the purely vertical subordination of lower organs; and concession of the right to central military organs, on the basis of law, to regulate juridically the service conditions and activities of troops.

The Communist Party and the Soviet government have always attributed great significance to the centralization of military affairs, regarding it as the most effective measure of organization and consolidation of military efforts of all Soviet republics on a national scale. The resolution of the Fifty All-Russian Congress of Soviets "Concerning the Organization of the Red Army" stated: "A condition for success of all measures pertaining to the creation of the army is consistent centralism in military administration..." In the draft of the directive by the Central Committee of the Russian Communist Party concerning military unity of the Soviet republics, V. I. Lenin stressed that in order to gain victory in the Civil War it is necessary to have "a single command for all detachments of the Red Army and strict centralization in disposing of forces and resources of the socialist republics, and particularly, in making use of the entire apparatus of military supply and of railroad transport, as a very important material factor in war, since it is of paramount importance not only for military operations but also for supplying the Red Army with combat equipment, clothing, and food supplies." (Works, Vol. 29, page 373)

The 8th Congress of the Communist Party, after repulsing the so-called "military opposition" which defended the vestiges of "partisan methods" (partizanshchina) in the army, stated in its decisions: "The acquisition

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of political power has grown into a state apparatus for the planned building of a centralized army, which by virtue of its unified organization and unified administration will be able to achieve maximum results with minimum losses. To advocate partisan methods, as a military program, would be the same as to recommend the return from large-scale industry to domestic handicraft." (KPSS v rezolyutsiyakh i resheniyakh s"yezdov, konferentsiy i plenumov TsK, The CPSU in Resolutions and Decisions of Congresses, Conferences, and Plenums of the Central Committee, Part I, Gospolitizdat, 1954, pages 432-433).

In accordance with decisions of the Communist Party, the first USSR Constitution of 1924 confirmed, by an act of legislation, the unification of military affairs on a national scale, as a result of which the united USSR Armed Forces were created. As compared with other branches of the state administration, the centralization of the military administration has been most complete and most consistent.

At present, the principle of centralization in military administration is growing more and more important. The appearance of rockets and nuclear weapons has further increased the significance of centralization in the control of coordinated actions by all branches of the Armed Forces and all combat arms, especially the Rocket Troops.

However, the principle of centralization does not signify that all operational functions of military administration are concentrated in central organs, or that lower-ranking organs are replaced in any way by higher organs, or that the independence and creative initiative accorded to lower military organs by military regulations is restricted. One of the important tasks of legal control of the military administration is to establish a degree of centralization of military administration functions which would be most expedient and most consistent with present requirements. Local organs of military administration are given a certain amount of independence in selecting ways and means of carrying out orders and directives from the center, and their implementation does not follow a definite form, but allows for initiative and a constructive approach. The lower organs of military administration have clearly defined rights and obligations and they are fully responsible for the supervision of their subordinated troops.

One of the most important principles in the structure of the USSR Armed Forces, as stated in the CPSU Program, is one-man command. From an organizational and legal standpoint, this means the concentration of all leadership functions in one person (commander or chief); these functions are related to command, political supervision, drill, administration and supply, as well as control of the activities of subordinates. One-man command also involves the establishment of responsibility of a single person (commander or chief) for all aspects of life and activities in a military unit or soyedineniye (establishment or institution), together with personal responsibility of officials for individual aspects of life and activities in a military unit or soyedineniye (establishment or institution).

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The absolute necessity for one-man command has been confirmed by the entire military history and experience of Soviet military development. In discussing one-man command as the only correct system of work in the army, V. I. Lenin stated in a speech at the Third All-Russian Congress of Councils of National Economy, in January 1920, that the army had progressed, "by natural development, from the state of casual, vague collectivity, to a state of collectivity raised to a system of organization, and finally to one-man command as the only correct system of work" (Works, Vol. 30, page 286). The unity of will and action of the military personnel is unthinkable without the unity of troop control, especially now, under conditions involving the use of modern weapons. This unity can best be achieved by one-man command.

The task of legal control of Soviet military structure is to continue strengthening the principle of one-man command and to provide the most favorable conditions for a commander or chief to perform his leadership functions and to develop his organizational abilities. For this purpose, the legal norms have established rules confirming this principle and favoring its consistent application, i.e. the compulsory nature of orders issued by commanders or chiefs; the strict order of subordination of officials (functionaries); the conformity between the extent of rights and obligations of officials and the nature of their functions; personal responsibility of all servicemen and officials for the tasks entrusted to them; and encouragement of reasonable initiative aimed at the best possible implementation of orders.

One-man command in the Soviet Armed Forces is applied to all levels of the military organism. The Minister of Defense, commanders in chief of branches of the Armed Forces, commanders of military districts, and commanders of *chasti* and *soyedineyiya*, are invested with individual administrative power and corresponding rights, which are clearly defined by Soviet laws, military regulations, statutes, and manuals.

One-man command in the Soviet Armed Forces does not exclude, but presupposes the possibility and necessity of collective discussion of decisions on more important matters, prepared by commanders or chiefs. A preliminary, collective discussion, if it is expedient in regard to time and purpose, is a most important means of utilizing the experience and knowledge of subordinates. It helps the commander to make the most correct decision; it strengthens the active contact between the commander and his subordinates; and it promotes the growth of the latter and inspires them to use initiative and a constructive approach in carrying out the commander's decisions. A commander, like any supervisor, must not only teach the masses, but must learn from them. Naturally, the commander always retains the right to make the final decision. This is an unshakable principle. However, a commander must consider the opinions of subordinates and encourage them to display reasonable, creative initiative. V. I. Lenin remarked that there can be no success in modern war without conscientious soldiers and sailors

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who show initiative. This statement by Lenin is especially applicable to nuclear-rocket war. Initiative and independence of subordinates must be guided toward the unconditional, prompt, and best possible execution of a commander's order.

It has been confirmed by many years of experience, both during war and during peacetime, that Soviet one-man command has combined in the best way the one-man authority of a commander with the will of the collective. A one-man commander, who is self-exacting in the highest degree, constantly strives for improvement of his political and special knowledge; he serves as an example of self-discipline and takes care of his subordinates. A one-man commander never forgets that one-man command not only gives him extensive rights, but also imposes a great responsibility. Only under those conditions will he maintain an unshakable authority over his subordinates and will carry out the principle of one-man command effectively in all spheres of leadership and troop control.

The Communist Party has shown particular concern in making sure that one-man command in the Soviet Armed Forces should be in strict compliance with their socialist nature and that it should exist on a party basis.

The main point in the party concept of Soviet one-man command is the fact that each commander, no matter what post he may occupy, carries out the policies of the Communist Party and the Soviet government, and faithfully follows the Leninist principles of party and state supervision in all of his activities.

A Soviet commander can perform his responsible duties successfully if he will seek the support of the party organization in all his activities and will skillfully use the party's strength and influence in solving the tasks entrusted to the troops.

Our party has placed great trust in military leaders by establishing the principle, in the "Instruction to CPSU Organizations in the Soviet Army and Navy," that "the commander of a regiment (a ship, or a podrazdeleniye), or the chief of a military educational institution (establishment), who is a member of the CPSU, seeks the support of the party organization in his work and guides the activities of the party organization toward a successful performance of combat tasks and plans for political and combat training, and toward the strengthening of military discipline. A commander (or chief) who is not a member of the CPSU, seeks the support of the party organization in solving these tasks."

In analyzing the past experience of commanders, who have skillfully implemented this party requirement, N. S. KHRUSHCHEV stated: "...in the army, a wise commander always seeks the support of the party and Komsomol organizations. The more closely he cooperates with the party and Komsomol organizations, and the more strictly discipline is maintained in a chast',

the more successful a commander will be in controlling the troops." Approved For Release 2000/08/09 : CIA-RDP85T00875R000300090002-4
M. S. MIKOSHCHEN, Stroitel'stvo kommunizma v SSR i razvitiye sel'skogo khozyaystva, The Building of Communism in the USSR and the Development of Agriculture, Vol. 5, Gospolitizdat, 1963, page 238.)

The Communist Party, consistently following the line of strengthening one-man command in the Soviet Armed Forces, is aware of the fact that one-man command has become increasingly important at the present stage in the strengthening of combat readiness and in ensuring victory of the troops in war. The decisive role in achieving victory in a rocket and nuclear war will belong to those people who have mastered technical equipment and military skill; who are endowed with high moral, political, and fighting qualities; who clearly understand the just objectives of war; who are educated in an active spirit of aggression; and who have a high degree of organization and discipline. The success of combat operations of our troops will depend to a great extent on a centralized, flexible, efficacious, steady, and firm control at all levels, on the basis of one-man command, and on unquestioning obedience to a commander and faultless execution of his orders.

It is quite evident that the conditions and character of combat actions with the extensive use of nuclear weapons will require that Soviet command cadres have high ideological convictions, extensive military-theoretical and technical knowledge, and a thorough understanding of the peculiarities and potentials of new weapons, and be able to use them skillfully.

All this proves that under present conditions the practical implementation of one-man command makes higher demands on command cadres, requiring more knowledge, higher moral, political and command qualities, organizational abilities, and skill in the leadership of troops.

Military discipline has particular importance in Soviet military structure; i.e., the strict and exact compliance by all servicemen with the order and rules established by laws and military regulations. V. I. Lenin demanded the highest degree of conscious discipline in the Red Army and Navy. He stated that the army required rigorous, ironclad military discipline (Works, Vol. 29, page 226; vol. 30, page 405).

Founded on Leninist principles, the CPSU has taken measures at all stages of development of the Soviet Army and Navy to continue the strengthening of military discipline. This is quite understandable. Troop control and success in training, education, and combat utilization of troops would be unthinkable without firm military discipline and strict regulations. Therefore, the general and continuous strengthening of military discipline and the maintenance of strict military law and order are some of the most important duties of military administrative organs, military officials, and the entire personnel of the USSR Armed Forces. The establishment of a

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correct order of relations within the Armed Forces, which would be most favorable to the development and maintenance of high, conscious, military discipline, is one of the principal tasks in the legal control of the military structure.

Soviet military discipline is unthinkable without strict compliance with Soviet laws; this is clearly expressed in the definition of military discipline contained in the Disciplinary Regulations of the USSR Armed Forces. Military discipline has a legal character. There is a deep, organic connection between socialist legality and military discipline. The fulfillment of requirements of laws and military regulations is a necessary condition for achieving order and organization in the troops, accurate service performance, high results in combat training, and complete elimination of military misdemeanors.

It should be stressed particularly that the principal requirement of military discipline is unquestioning obedience to the orders of commanders or chiefs. The distinguishing feature of Soviet military discipline is the conscious character of compliance with military order. M. V. FRUNZE stated: "The ideology of the new class which has assumed power has found its reflection in the internal conditions of the Red Army. The concept of discipline has changed. Instead of mechanical submission, based on fear and coercion, there has been created the discipline of a soldier-citizen, who is aware of the necessity for subordination. Official barriers have disappeared to a great extent, and the Red Army is the most democratic army in the world." (M. V. FRUNZE, Izbrannyye proizvedeniya, Selected Works, Vol. II, Voenizdat, 1957, page 39.)

Unquestioning obedience of subordinates to the orders and instructions of chiefs is the pivot of military discipline. Without it, the strengthening of combat capability and maintenance of high combat readiness of troops would be unthinkable. The voluntary and conscious nature of obedience on the part of the subordinates is the essence of socialist military discipline.

A number of legal conclusions are drawn from the requirements of unconditional obedience, including the inadmissibility of personal, as well as judicial argument against the orders of a chief; obligatory execution of an order given by a senior chief, even if it conflicts with an order previously given by a junior chief; non-interference by local authorities in the legal actions and orders of a military command; and a number of others.

According to the teachings of the party, particular attention should be given to the inculcation and strengthening of a firm discipline among the troops under present conditions. The latest forms and methods of conducting combat operations with the use of nuclear weapons demand that each *podrazdeleniye*, or *chast'*, and each serviceman be in a state of constant, increased combat readiness, high vigilance, and maximum discipline and organization. Under present conditions, the achievement of victory requires

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a higher level of military discipline and a more strict execution of all orders and instructions than ever before in the history of the army. Discipline in the army during peacetime most clearly indicates the state of combat readiness of the troops.

The Communist Party and the Soviet government have shown great concern for the further increase of combat power of the USSR Armed Forces, and for the strengthening of socialist legality and military discipline in the Armed Forces, by their careful and thorough development, under the direct supervision of the Central Committee of CPSU, of a Soviet military doctrine and its corresponding new military regulations, i.e., the Disciplinary Regulations of the USSR Armed Forces and the Internal Service Regulations of the USSR Armed Forces, adopted and confirmed by the 23 August 1960 decree of the Presidium of the Supreme Soviet USSR, and the Regulations on Garrison and Guard Services, confirmed by the 22 August 1963 decree of the Presidium of the Supreme Soviet USSR.

The study and practical application of new military regulations in the Soviet Army and Navy is conducted by commanders, political organs, party and Komsomol organizations, and the entire Army and Navy community, in the interests of a further increase of combat power of the Army and Navy, a further strengthening of discipline, and complete elimination of violations of socialist law and military discipline by the troops.

Military discipline, as one of the types of Soviet state discipline, reflects the specific features of military service and therefore has a number of distinguishing traits as compared with other types of state discipline. Each serviceman has the sacred and inviolable duty to comply with the law, to fulfill the requirements of the military oath and military regulations, to endure all hardships and deprivations of military service steadfastly, to be honest and courageous, and not to spare his blood or even his life in the performance of his military duties.

V. I. Lenin stressed repeatedly that constant, strict demands must be made by supervisors of their subordinates in the process of Soviet state administration, and especially in the administration of the Armed Forces. Based on Lenin's precepts and CPSU instructions concerning ways and means of strengthening discipline in the Armed Forces, the 1960 Disciplinary Regulations state that firm military discipline among military personnel may be achieved by developing high moral, political, and fighting qualities and conscious obedience, and by maintaining firm military order in chaste and on ships, as well as by the fact that commanders and chiefs must make high demands of their subordinates, and by the commanders' skill in combining and properly applying measures of persuasion and compulsion in everyday contact with personnel. It is particularly necessary for each chief to conduct systematic and comprehensive educational work with all of his subordinates as a whole and with each one individually.

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One of the most important duties of each commander and chief is the education of subordinates in the spirit of steadfast compliance with all requirements of the military oath and of discipline, and the development and strengthening of the servicemen's sense of military honor and military duty. The Disciplinary Regulations of the Armed Forces require that commanders at all levels discover the causes for disciplinary violations by taking prompt and comprehensive action, and that they prevent misdemeanors of servicemen. The Regulations demand an uncompromising attitude even toward minor violations of military discipline.

Therefore, commanders and chiefs at all levels, in addition to their daily concern for the needs of subordinates, are strictly obligated to make severe but justified demands, and to instill firm military discipline. Higher-ranking commanders and chiefs not only make personal demands of their subordinates, but educate them to be exacting toward their own subordinates, while showing fatherly concern for their personnel. Higher-ranking commanders support resolute officers, NCOs, and sergeants in every possible way.

A very important role in the further strengthening of military discipline and elimination of disciplinary misdemeanors must be given to the entire army community under the supervision of commanders and political organs. Therefore the military regulations, especially Disciplinary Regulations, assign great importance to the whole army community. A comradely discussion among servicemen concerning a misdemeanor of one of their fellow-soldiers has a great effect both on the guilty person and on the whole group.

However, despite the growing importance of measures of persuasion and of encouragement in the system of military education, and in the strengthening of military discipline and socialist legality in the Soviet Army and Navy, the role of compulsion and punishment must not be belittled. Both methods, i.e., those of persuasion and compulsion, must be combined and used skillfully in the painstaking daily education of subordinates. At present, commanders and chiefs at all levels are engaged in this type of work.

In strengthening military discipline, one of the most important aims in the activity of commanders, political workers, party and Komsomol organizations is the implementation of Communist ethics in the life of soldiers. This work is based on the moral code for builders of Communism. The moral principles of this code reflect the noble, spiritual nature of the Soviet people.

Based on the principles of the moral code for builders of Communism, the Soviet soldiers develop high moral, political, and fighting qualities, such as life-giving socialist patriotism; infinite love for their fatherland, the Communist Party, and the people; proletarian internationalism; hatred for imperialist aggressors; high vigilance; readiness for self-sacrifice in

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the name of victory over imperialist aggressors, the collective principle among military personnel; courage, steadfastness, and initiative in battle against the enemy.

The ethical norms determining the behavior of soldiers are fully and clearly incorporated in Soviet laws, in the military oath, and military regulations. They reveal to the soldiers the purpose of their daily, socially useful, military work; the requirements of modern war; and the ways and means of achieving true military skill, which is necessary for victory over the enemy. The moral principles of Soviet people, which have been confirmed by law, have become the law for all servicemen of the Soviet Army and Navy.

A comprehensive and academic study of the principles underlying the structure of the USSR Armed Forces, including organizational and legal principles, will further the strengthening and perfecting of our Army and Navy and the increase of their combat capability and combat readiness.

IDEOLOGICAL WORK IN THE ARMED FORCES
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by Col. V. RODIN

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The past decade, a bright chapter in our people's battle for Communism, was commemorated by huge successes in economic and sociopolitical areas and in the ideological activity of the party. Freed from the dogmatism resulting from the cult of personality, ideological work received new and powerful stimuli for its development and perfection.

Presently the battle between the Communist and bourgeois ideologies has become exceedingly acute. On one hand there has been a rapid and all absorbing growth in the influence of Marxist-Leninist ideas on the whole world and on the other hand the influence of the imperialist ideology has sharply decreased. Thus, the ideologists of imperialism are placing their stakes on ideological diversions and enlisting many various means of psychological warfare.

The course of world development fully confirms the correctness of the general line of the international Communist movement which was worked out in meetings of fraternal parties in 1957 and 1960, the vital force of the conclusions and positions of the 22d, 21st, and 22d Congresses of our party, and the Leninist Program of the CPSU.

However, as correctly pointed out by Comrade M. A. SUSLOV in a report to the Plenum of the Central Committee CPSU on 14 February 1964, our successes may have been greater were it not for serious difficulties which arose in the socialist camp and the Communist movement in connection with the schismatic activity of the leaders of the Communist party of China.

Blinded by nationalistic arrogance the leaders of the Chinese Communist Party, contrary to the general course of the world Communist movement, set out on their own particular course, to all intents and purposes discarding the Declaration and Announcement collectively worked out by the Communists and party workers. Thus, the decisions of the June Plenum of the Central Committee CPSU, which pointed out concrete methods for perfecting our ideological weaponry and further elevating the spirit of incompatibility toward any hostile and antiMarxist opinions, acquire still greater importance.

The Communist ideology is the ideological basis of the moral spirit of troops which is one of the most important elements in the combat strength of the Soviet Armed Forces. It is namely by means of ideology that the socialist social system renders its most concentrated and, in the final account, decisive influence on the moral strength of the people and Army and on the formation of high moral and combat qualities among Soviet fighting men.

As noted in the Program of the CPSU, the formation of a world outlook among all laborers of the Soviet society, based on Marxism-Leninism as a complete and harmonious system of philosophical, economic, and sociopolitical opinions, acquires primary importance in the modern stage of the development of our society. A scientific world outlook plays a decisive role in the realization of the norms of Communist morals and enables them to be transformed into constant, vital reference points. A person's firm ideological conviction stipulates his correct relation to social obligations, to the group, and to official responsibilities.

It is also important to note the importance of a scientific world outlook in overcoming remnants of the past in the minds of men and in the battle against the corrupt bourgeois ideology. The June Plenum of the Central Committee CPSU as one of the actual tasks of ideological work determined that it is necessary to protect the minds of the Soviet people from the noxious influence of the imperialist ideology. A necessary condition for the completion of this task is combat against the bourgeois ideological influence on the Soviet people, including Soviet military personnel.

All of the best moral and combat qualities of a soldier, his loyalty to military obligations, discipline, alert vigilance, bravery, and initiative, depend to a decisive degree on his ideological conviction. The ideological conviction of a man has a telling positive effect in a combat situation. In the tensest moments of a combat, a battle of different motives and feelings occurs in the mind of a man, in particular between obligations and a feeling of fear for his life. If victory is to be achieved by the positive qualities in this pitched battle, the soldier's feeling of obligation must have firm ideological and political guidance.

How is an ideological conviction formed? It would be a mistake to assume that communistic beliefs are developed only by lectures, training, and books. They are formed and developed primarily in a process of daily practical activity, in combat, labor, and creative challenges.

Ideas become stable motives of conduct only when they control the whole spiritual world of a man, subdue his feelings and emotions, and have an active influence on his whole mental constitution.

It must be confessed that the complex process of the influence of ideology on the psychology of a man has not been completely investigated in our literature devoted to problems of education. Often in practice ideological work is limited to the transmission of a determined sum of knowledge. Experience shows that this is insufficient for the formation of a man's ideological conviction. Ideological convictions are in the final count, a synthesis of a scientific world outlook, emotional experience, and willful acts of a man transformed into concrete practical actions. For this reason, in educational work it is important to combine the ideological influence on a man with the overall development of his mental processes to produce a unity of his mode of thinking and positive emotional reactions. Only

then will a soldier be able to overcome any tests of war. Modern combat and operations urgently require this very combination. The use of nuclear weapons in war has led to men having to endure greater emotional strain. The huge destructive force of weapons and the danger of radiation have intensified the feelings of war to an unprecedented degree. It is important in these conditions that a soldier know how to master his own feelings. Thus, his moral and psychological stability must be strengthened and he must be trained in self control, discipline, and certainty in his own strength. It is an undeniable fact that far from all instructors try to penetrate into the inner world of the trainees to study the complexity and often the contradictions of the process involved in the formation of ideological convictions.

It must be noted that a young man experiences both a physical and ideological maturity during his years of military service. It is not necessary to point out how important this period is.

Our Soviet school system is preparing and educating a worthwhile and morally healthy generation of Soviet young people. Every year young people enter our Armed Forces with excellent general educations and thorough intellectual development unquestionably superior to the soldiers of the bourgeois armies. Nevertheless, contradictions between acquired knowledge and personal, primarily emotional, experience are often detected during political and moral training. In his life a man meets many obstacles and various good and bad influences in his immediate environment. The consequences of possible incorrect training in the family, the instilling in certain cases of bad esthetical taste, manners, and customs which do not answer the high principles of the moral code of the builders of Communism must also be taken into consideration. In one case this is a temporary and superficial emotional attack or a fleeting frame of mind which does not penetrate to the depth of the mental processes, but in another it is a conflict between a person's emotional condition and world outlook.

The task of the educator is to impart to the soldier a determined sum of knowledge and by every means of education to destroy this negative emotional barrier, to eliminate all superficial personality traits foreign to our society, and to evoke and strengthen positive social feelings in the soldier by acting on his psychology and consciousness. It is important to know the emotional state of the soldier well, to aid him when he is disturbed or has doubts, not slipping, of course, into superficial sentimentality. Naturally all this requires that commanders and political workers be masters of pedagogy, that they have knowledge of individual peculiarities of people, and that they employ a fine approach to training combined with tact and patience. This is the secret foundation of carrying out ideological work with people.

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The program of the CPSU teaches that the communistic ideas should be combined organically with communistic life activity for every man, group, and organization. The program requires that every man, group, and organization will not only know how he must act, but thoroughly understand his actions and behavior and discharge his military obligations and social responsibilities with a deep feeling of moral satisfaction.

In the course of ideological and moral education in the combat training process, those habits and skills which are necessary in military activity are worked out according to how well the feeling of responsibility for the destiny of their native land has been formulated among soldiers. The imparting of habits to people is a very complex and difficult matter.

There are elementary norms of conduct for people which have the force of habit: bearing, precision, accuracy, tact, responsiveness, etc. These useful qualities have a very important role in military activity and the instructor's task is gradually and steadily to widen the circle of these norms of conduct among soldiers. By observing these qualities on a daily basis, a man does not always need to choose a motive for his conduct, since they are already firmly established and have become second nature to him so that he cannot act otherwise.

These habits are implanted among Soviet soldiers on the basis of a deep ideological conviction.

The habit of obeying and automatically fulfilling the established order of military service is worked out by means of all forms and methods of training and education, not by mechanical compulsion. It is well known that coercion has never been successful in developing original creative initiative among soldiers for the fulfillment of assignments. Only high moral traits based on deep ideological beliefs and highly patriotic feelings of soldiers can give full scope for transferring professional knowledge into first-class combat skills and original military valor.

When speaking of the role of Communist ideology in strengthening the moral spirit of troops, we must keep in mind that ideas by themselves do not decide the fate of any activity. Marx wrote, "Ideas in general cannot do anything. People who exercise practical force are needed for the realization of ideas" (K. Marx and F. Engels. Works, Volume 2, Gospolitizdat, 1955, page 132). In this very concise and deep remark, K. Marx defined his ideas concerning the combination of ideological and organizational activity in the training and educating of people.

People must be organized in a certain way for ideas to be materialized into concrete practical results. The principles for organizing man's activity have great importance in the implementation of high communistic ideals. V. I. Lenin pointed out many times that moral strength can be transformed into material strength only with splendid organization.

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In its turn the organization of human activity in any sphere of life, including the realm of military activity, bears the indelible imprint of class ideologies.

The ideology which is predominate in our Soviet society penetrates all of military science and the whole complex copulation of interrelationships between the army and the people and between military personnel of all categories within the limits of military organization. It also is the ideal prerequisite for the principles of the construction of our Armed Forces.

An understanding of the ideological content of the basic principles of Soviet military construction in its turn aids Soviet soldiers to determine their conduct in the military group correctly and build relationships with their comrades in service, both their seniors and subordinates.

One of the most important principles of the construction of the Soviet military is one-man command. In the implementation of leadership by the Armed Forces into reality, the Communist Party demands that one-man command be conducted on a party basis. The one-man commander is guided in his activity by communist ideologies. He is accountable to the party and the state and is the spokesman for the will and interest of the people. The Communist party makes it incumbent upon Soviet leaders to study the Leninist style of leadership and requires that they be trained to respect the creative initiative of the masses and their group skills. The knowledge of how to direct the activity of masses, to learn from them, and to study and enlarge their skills is an integral trait of the Leninist type of leader. V. I. Lenin decisively rejected any opposition to one-man command and collectivity, considering such opposition dangerous and trending toward theoretical confusion. He demanded the thoughtful combining of one-man command and collectivity and spoke out against excessive exaggeration of boards, calling them talking shops. In the Armed Forces one-man command is the principle of military construction, but for its realization commanders of all ranks must depend on party and Komsomol organizations in their activity.

The stable basis of one-man command in the Soviet Army and Navy has always been the high consciousness of soldiers and their feeling of obligation to their native land. However, at the same time one-man command also assumes an administrative and legal constraint. Ideological, moral, and just features in Soviet one-man command compose an inseparable unity and it is necessary to strive for their harmonious coordination in practical organizational work.

The Leninist style of leadership envisages the correct combination of methods of persuasion and compulsion. V. I. Lenin pointed out, "Persuasion and compulsion, this is a contradiction of life assuming an inescapable combination of two contradictory functions" (Leninist Collection XXXVI, page 389). It is clearly evident that the combination of these contradictory functions in practice is a difficult matter. V. I. Lenin pointed out that

we can combine "contradictory understandings in such a way that we have a cavophony or in such a way that we compose a symphony" (Works, Volume 32, page 9).

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Persuasion as a method of leadership, of course, cannot be understood in the sense of "persuasion" when giving orders and directions or boiled down to only brief explanations of work immediately before the execution of a given task by a military group. There is nothing more dangerous than this impression about the method of persuasion. A. S. Makarenko stated, "...when you must demand something, you must not cultivate a theory, but demand and strive for the fulfillment of your demands" (A. S. Makarenko. Works, Volume 5, Publishing House of the Academy of Pedagogical Sciences RSFSR, 1951, page 147).

Persuasion is accomplished in the training process and in the course of party-political work among troops by persistent, constant, and purposeful educational work on the part of commanders, political workers, and party and Komsomol organizations. The achievement of this goal must not be limited to only official, planned undertakings. Soldiers must be ideologically influenced daily by all means available, training activities, various forms of mass political work, and all military training activities.

The chief role of Marxist-Leninist ideology as the moral basis for the life and activity of the Soviet Armed Forces is not only in its just and educational influence on the consciousness of soldiers. It is the ideological basis for military science and the ideological and theoretical preparation of military personnel and it inescapably influences the development of military science and military theoretical research.

The influence of Marxist-Leninist ideology on the development of Soviet military science is very important. This is natural, since war is the most extreme method of eliminating contradictions between classes and states. The ideology of ruling classes is the strongest influence on the process of studying and enriching the skills of war and all practical combat training of troops in peacetime. Military science, as the theory of military affairs, is not only the accumulation of war experiences for a certain historical epoch and the implementation in the military of new equipment and weapons in peacetime, but it is also the interpretation of experience from the point of view of the ruling classes, their philosophical opinions, and political views. M. V. Frunze wrote "The military structure of a given state is characterized by the dominant views and attitudes in the military and, finally, by the very content of the principles of military affairs determined by the whole social structure of a given people and, in particular, by the essence and characteristics of the ruling class which is in power in the given period of time" (M. V. Frunze. Selected Works, Volume II, Voenizdat, 1957, pages 11-12).

Thus, Soviet military science in determining the essence of the moral factor and its role in war studies the whole aggregate of sources

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the socio-economic conditions of the life of the people, the character and aims of war, the national peculiarities and traditions of the people, the degree of economic development of the country, the technical equipment of the army, and many others including features of the psychological order. However, out of this aggregate of sources, Soviet military science, governed by the principles of dialectic materialism, defines as most important the social structure and the character and aims of war.

Scientific, Marxist-Leninist methodology and the just character of political ideologies which are defended by Soviet military science create favorable possibilities for the objective and universal study and enrichment of the experience of war in the modern epoch, for equipping troops with new weapons and combat equipment, and for conducting the actual combat training of troops in peacetime. On the force of this, Soviet military theory in all stages of the development of the Soviet state solved problems for maintaining the state's defensive capability at a high level. However, in the period of the Stalin personality cult subjective misinterpretations in evaluating the experience of war were allowed, especially in the years preceding world war II. These mistakes stopped the development of Soviet military science. The elimination of the personality cult and its consequences in all spheres of the life of the Soviet society had a beneficial influence on the development of modern military science and produced a wide scope for its development on the theoretical basis of Marxism.

Ideologies and policies of ruling classes have great importance in the formation of the military doctrines of states. Soviet military doctrine, as worked out by the Central Committee CPSU and N. S. KHRUSHCHEV, is characterized by scientific validity, and realism in its positions, principles, and conclusions which have all resulted from the peculiarities of modern war. Marxist-Leninist ideology enables Soviet military science to analyze objectively the process of waging battle in the conditions imposed by the revolution in military affairs, and predetermines a unity of opinion and discussion on special military technical questions within the framework of the community of ideological opinions.

The unity of opinions on the most important questions of the defensive socialism is of great importance for strengthening the defensive capabilities of the countries in the peaceful socialist system. It must be pointed out in connection with this that every ideological disagreement produced by the distorted interpretations of the principles of Marxism-Leninism by the leaders of the Communist Party of China threaten important damage to the general unity of the forces of all the socialist states in light of the increased aggression by modern imperialism.

The nationalistic approach of the leaders of the Communist Party of China, who advocate a theory of dependence on their own strength, undermines the very idea of mutual support in the socialist countries and

threatens damage primarily to their own country, since such a theory will lead inescapably to the isolation of China from the fraternity of the
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It can be seen by the schismatic actions of the leaders of the Communist Party of China how misinterpretation of Marxism-Leninism leads to fundamental mistakes in theory. They are negating the decisive influence of the world socialist system on the course of the world's development, struggling against the Leninist principle of the peaceful coexistence of states with different social orders, and attempting to overturn the conclusions of the international Communist movement concerning the possibilities for preventing war in modern conditions. The leaders of the Chinese Communist Party are propagating an adventurous conception of a supposed necessity for unleashing a war against imperialism without considering the deaths of hundreds of millions of laborers and the destruction of whole countries and peoples. After metaphysical consideration of the role of masses of people in history, the Chinese leaders in their theoretical arguments belittle the role of atomic weapons, calling them paper tigers. The leaders of the Chinese Communist Party are presently turning themselves away from the peaceful communist movement in all fundamental questions.

The monolithic ideological solidarity of the fraternal parties of the socialist countries and the strengthening of the friendship and solidarity between the soldiers of the socialist armies on the basis of proletarian internationalism compose one of the most important conditions for strengthening the defensive might of the whole friendship of socialist nations.

The united and inseparable process of ideological work in the Armed Forces has various facets and manifestations. It is quite obvious that the basic area of the influence which the Communist ideology of our society exerts on the combat capability of the armed forces cannot be considered separately. The scientific, Marxist-Leninist world outlook, as stated earlier, simultaneously is the ideological basis for the imparting of high moral combat qualities among Soviet soldiers and penetrates the organizational activity of commanders and political workers. And at the same time it has great influence on the special and military theoretical training of command personnel.

However, it is important to consider the peculiarities and specifics of the influence of various ideological forms on different elements of the combat might of the Armed Forces. Philosophy, political ideology, and the system of economic opinions acquire primary importance in the course of the ideological and theoretical training of command personnel and all Soviet soldiers. Ideological work in the Armed Forces assumes a harmonious combination of all ideological forms and means of ideological influence on the consciousness of soldiers and has as its goal the constant maintenance of the combat readiness of the Soviet armed forces at a high level.

Comment by Maj Gen K. SEVAST'YANOV

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The question of augmenting strategic efforts in modern armed conflict, examined in the article by Maj Gen Kh. DZHELAKOV (Voyennaya Mysl', No 1, 1964), is, in our opinion, a very urgent one.

The author correctly points out the sources and basic directions of the augmentation of the strategic efforts of states in modern armed conflict and discloses the component elements and degree of this augmentation, including its quantitative and qualitative side. However, we are permitting ourselves to supplement several propositions of the article.

The most important moment, ensuring the successful conduct of a war and rendering a decisive influence on the possibility of the timely augmentation of efforts, is seizing and maintaining the strategic initiative from the very beginning of the war. This was extremely important in the past as the author points out. Now, when armies are armed with weapons with unprecedented destructive capabilities, possession of the strategic initiative can under certain conditions even predetermine the outcome of the war as a whole.

Only when the strategic initiative is seized at the very beginning of a war can normal conditions be established for the growth of the strategic role during its course, the necessary superiority in forces and equipment over the enemy maintained, and the goals of the war achieved most successfully.

However, in order to seize and then maintain the strategic initiative in armed conflict it is necessary, in our opinion, to possess well-organized reconnaissance, to constantly know the plans and intentions of probable enemies, to possess powerful armed forces, equipped with modern weapons and combat equipment and at a level of high combat readiness, and to have state reserves of all types.

Considering the aggressive plans of the imperialist states' military leaders, one must not exclude the possibility of their unleashing a war. Seizure of the strategic initiative will proceed under the extremely complex conditions of the beginning of the armed conflict, with mutual losses, much destruction, broad zones of radioactively contaminated terrain, etc. In such a strategic situation the role of strategic reserves increases with particular sharpness.

The armed forces of the leading states now have powerful means of fighting which are capable of putting major groups of troops out of commission at long range and which they had not had previously.

Significant strategic reserves are required to replenish these losses. Moreover, the increasing scale of armed conflict requires strong reserves for augmenting the efforts of the first strategic echelon which will hardly be in a position to execute alone the great number of important strategic missions in the path to achieving the goals of war.

Thus, to carry out modern armed conflict successfully it is necessary to have, in addition to a strong first strategic echelon, strong and well-trained subsequent strategic echelons and the peacetime establishment of powerful state reserves. This permits the power of the first strategic echelon's strike to be increased at the necessary moment and preserves the necessary force superiority in the theaters of military operations and secures achievement of the goals of war within a short time. As a result of the coalition character of a future war the strength and equipment of strategic echelons and state reserves must now be examined not within the confines of one state but on the scale of a coalition of states.

Regarding the quantitative and qualitative aspect of strategic reserves, the qualitative aspect, in our opinion, with the existence in the armed forces of the chief states of principally new and highly effective means of armed conflict, has now acquired a more important significance than the quantitative.

Nuclear weapons and other means of mass destruction, not living forces and conventional armament, will now play the main role in strategic groups. Hence, of course, man as the master of modern equipment and the high moral and political level of personnel as a whole will, as before, have great significance.

With the sharply increased scale of military operations the scope of maneuver by strategic reserves is also increasing. The American command, for example, suggests maneuvering them over great distances, even from one continent to another and in a very short time. In these conditions the role of mobility in troop operations in general and the movement of strategic reserves in particular increases.

The maneuver of strategic reserves in modern conditions will proceed from the very beginning under the active influence of enemy means of mass destruction. In the past the only threat of action against reserves in the depth were attacks by aircraft with conventional ammunition, which did not, by the way, much damage completion of the regrouping of troops. Now nuclear weapons and other enemy means of mass destruction can create great zones of destruction and radioactive contamination in the path of the moving troops resulting in great losses. All this complicates effecting the maneuvering of strategic reserves to a significant degree or even wrecks it altogether. Therefore, old methods of carrying out the maneuver of strategic reserves are now in many ways unsuitable, and new, more effective ways must be sought.

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As is known, the American command is proceeding in this regard by increasing the mobility of strategic reserves operations, namely by further developing military transport aviation, by creating sufficiently simple flight apparatuses with vertical take-off and landing, in addition to cushion-air apparatuses, and by introducing into the troops highly mobile transport equipment reliably protected from the destructive factors of nuclear weapons.

The significance of secrecy in regrouping, from its very beginning, much increases in modern conditions. This is explained by the fact that enemy has effective means of reconnaissance enabling him to detect regrouping at long range and to direct nuclear weapons against the troops effecting the maneuver.

Concealment of the regrouping is effected by maintaining strict secrecy over the plans and times for effecting the maneuver of the strategic reserves and equipment and by well camouflaging the troops while in the areas in which they are deployed and while on the march. This is achieved by skillful utilization of the camouflaging characteristics of the terrain, by the dispersed deployment of the troops and the efficient formation of march order, by the timely exploitation of limited visibility conditions, and by the application of diverse camouflaging means, in addition to carrying out radio deception, counterradar deception, and effectively combatting enemy air and ground reconnaissance.

Well-organized protection against the effects of mass destruction weapons is of no small significance. It is attained through thoroughly organized radiation and chemical intelligence and timely warning to the troops of radiation, chemical, and bacteriological danger, through reliably protecting the troops against aerial strikes, not gathering troops in narrow places, correct use of the protective features of the terrain, and advanced training in measures for eliminating the after-effects of the enemy attack.

There are still many other interesting questions pertaining to the problem of augmenting strategic efforts in modern conditions which, in our opinion, have important significance for additional in-depth examination of the problem as a whole and of modern armed conflict in particular.

Comment by Maj Gen N. VASENDIN

Augmenting strategic efforts in armed conflict always has been and, apparently, will be the most important theoretical and practical problem.

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How will this problem be resolved in modern nuclear rocket war and what role in it has been relegated to nuclear means? In discussing the article by Maj Gen Kh. DZHELAKHOV we are expressing our opinion on this question.

The problem of augmenting strategic efforts in past wars was solved, as a rule, by establishing numerical superiority of forces and equipment on one or another sector of the front at a determined time. The composition and novelty of the means of destruction, their fire power, and the combat training given to troops has defined the qualitative side of this process. Insofar as numerical superiority was successfully established, so was the problem itself successfully resolved. Thus, in the effective utilization of force and equipment superiority, the skill of their application in armed conflict has always been of no little significance.

One must presume that with the radically changing character of armed conflict the essence of the very concept of "augmenting strategic efforts" and methods of solving this problem have become different.

It is primarily necessary, in our opinion, to include in a modern concept of "augmenting strategic efforts" in one theater of military operations or another the very fact of the application of nuclear weapons in a given theater. Nuclear weapons are a primary and necessary means of effecting the augmentation of efforts. All remaining methods of solving this problem stem from where, when, and how much nuclear means are employed. The number of nuclear charges employed in any theater of military operations or strategic direction and their total power represents the quantitative side of the augmentation of strategic efforts.

Moreover, the power of the nuclear strikes may be accepted as a criterion for the reliability of executing the assigned missions. This criterion (K) expresses the relation of the power of actual expended nuclear charges in a given area (M_p) to the theoretically required (estimated) power (M_1), that is $K = \frac{M_p}{M_1} < 1$. Consequently, the closer K will be to one, the greater the probability of achieving the objectives (if, of course, all the initial data for calculation is correctly derived).

From the aforesaid it follows that the concept of the "growing strategic role" in modern armed conflict means not only, as the author of the article writes, "the ability of a given state or coalition of states to increase the force of its resistance and at any given moment to be stronger than the opposing side" (p. 24), but primarily the ability of the armed forces of a country (coalition of countries) to deliver nuclear blows of the required power in a given theater of military operations or in the most important strategic direction. This, in our opinion, is the basic meaning of the augmentation of efforts modern conditions.

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The primacy of strategic nuclear weapons over other types of weapons is also affirmed by the fact that it permits the execution of the main strategic missions simultaneously, reliably, and in any theater of war.

The augmentation of strategic efforts depends, as is known, on the character of the strategic missions executed in various periods of the war.

In modern war, if the aggressive imperialist circles unleash one, the belligerents will strive to seize the initiative and execute military-strategic missions in the shortest time by employing nuclear means from the first minutes of the war. The armed conflict will assume a fierce, devastating, and destructive character. Strikes against the military-economic areas of the belligerents, the disorganization of their rear areas, and the destruction of strategic groups of troops will comprise one of the main missions.

In the beginning period of the war augmentation of strategic efforts will be manifested not only in the changing character of the operational structure of the troops and their increase in number, but also in the skill in the employment of nuclear means as a whole. Thus, the term "augmentation of efforts" must not be examined in the literal sense. The augmentation of efforts, in our view, consists in maintaining necessary strike intensity until the execution of all missions is completed.

During the course of the war solving the problem of augmenting strategic efforts depends on the character of the armed conflict and the content of the missions directed at completing the defeat of enemy groups of troops and the occupation of his most important areas and strategic points.

Troop combat operations will develop simultaneously in several strategic directions and will be carried out in complex conditions of radiation and mass devastation. The main means of armed conflict in this period, in the interest of augmenting strategic efforts are nuclear-rocket weapons. During the course of the war the strategic role will, as a rule, be increased on basic strategic axes by delivering nuclear blows, and also by employing frontal aviation in close coordination with all branches of the armed forces. Employing the results of nuclear strikes ground troops will be able to execute assigned missions at a high tempo.

During the course of the war, the role of all ways and methods of augmenting strategic efforts by branches and arms of the armed forces will increase.

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Comment by Capt 1st Rank N. V'YUNENKO

The concept of augmenting strategic efforts, in the form presented in the article by Maj Gen Kh. DZHELAKHOV, does not, in our opinion, fully meet the conditions for conducting modern large scale operations and war as a whole.

Specialists in a number of countries proceed from the fact that in the beginning period of a war both sides will strive to employ within a short time a large part of nuclear-rocket means accumulated in peace time in order to inflict maximum losses upon the enemy as a direct result of the first strikes. They present the further development of military operations approximately as follows.

Following the first, most powerful nuclear strikes, will come others significantly lower in force. In other words, the intensity and power of the nuclear strikes will gradually weaken as military operations unfold their duration increases, since reserves of nuclear ammunition will run low and losses in means of delivery will increase as a result of previous enemy strikes. It is to be supposed that the number of important strategic objectives undestroyed in previous strikes will also decrease.

For the armed forces of states having a relatively small territory, the destruction of main groups, the devastation of the most important administrative, political centers, the disruption of communications, and the disorganization of the state and military control at a given stage of the war will, obviously, make any kind of organized action simply unrealistic. Completing the defeat of armed forces in conditions induced by us will require relatively small effort: occupy the territory of the hostile state, bring order, and render aid to the population.

At first glance the situation may be somewhat different when a nuclear war is carried out by a powerful coalition of armed forces on both sides, each having approximately the same nuclear-rocket potential. Their conflict will be more intense. In this instance each of the sides will strive to thoroughly weaken the enemy (and consequently, his retaliatory strikes) and at the same time to preserve for themselves the necessary forces to achieve the ultimate end of the war. Obviously, in such conditions there will be no place for augmenting strategic efforts as it has been conceived in the past.

The author of the article states that augmentation of strategic efforts by means of employing nuclear weapons must now be understood "not in the sense of the increase of the force of each succeeding blow..., but as the growth of the sum power of all nuclear blows resulting from their delivery in sequence." (p. 28) This, in our opinion, is an unintentional attempt to preserve an old term, the meaning of which, as for other principles of military art, has long changed.

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If this recommendation is followed, then any battle operation or war in general may be examined as an uninterrupted augmentation of efforts irrespective of results attained in previous actions. In other words, if earlier augmenting efforts was one of the means of achieving victory in an operation or battle, then this concept, as it was expressed in the article, becomes an end in itself.

As conditions for armed conflict have changed so must such an important principle as the augmentation of efforts also undergo change. Thus, it hardly follows to preserve such a concept in theory, the content of which does not correspond to concepts in modern conditions. This concept is touched upon and examined in the article, if even to regard, as the author does, maneuver by forces and equipment as being essentially only a method for augmenting efforts in its former conception, not an element of it.

Speaking of the substance of the augmentation of strategic efforts relative to ground troops, PVO strany troops, air forces, naval forces, etc, comrade DZHELAKHOV maintains that the augmentation of efforts in these branches of the armed forces will be achieved "mainly by way of a quantitative increase and a qualitative improvement of the latter's forces and equipment." (p 28). Such a statement, in my opinion, would be basically correct for World War II.

The basic striking force of the navies of the leading countries in modern conditions is atomic submarines, the construction and commissioning into the fleet of which takes a long time, measured in months and sometimes years. It will obviously be very difficult to build such ships in war time to commission into the fleet and utilize them for executing combat missions, even if shipbuilding enterprises do not suffer enemy nuclear strikes.

That feature of the navy which separates it from other branches of the armed forces is the fact that it is difficult to replace seagoing forces during the course of a conventional war, let alone a nuclear-rocketwar. In past wars navies executed their combat missions with almost the same basic forces and components they had on the eve of the war. Ship construction during the war consisted only of repairing losses incurred in combat operations at sea. There has been no case where a significantly weaken navy has succeeded, as a result of the entry of new ships of those class which had suffered losses, in sufficiently restoring the combat might for subsequent struggle with a strong enemy in one war or another, as there has been let us say, in the ground troops or in aviation.

An exception to this was the events at Pearl Harbor in December 1941. The Japanese fleet succeeded in putting a significant part of the line forces, considered the basic striking power of the US fleet, out of commission.

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In subsequent combat operations the fate of sea battles of the American fleet was decided not by line ships, but by aircraft carriers with their deck-based aircraft. The possibility of reproducing submarines is hardly analogous to that held by Hitlerite Germany during World War II. Modern means of destruction are such that when successfully employed against military-industrial centers, the mass construction of new ships and their swift commissioning that took place previously will be difficult.

The American military leadership, for example, plans to build 41 atomic-powered missile submarines and to maintain a permanent fleet of 15 strike aircraft carriers in peacetime. These forces, it considers, will be sufficient to execute all missions of armed conflict at sea in a nuclear war.

Roswell Gilpatric, former US deputy secretary of defense, states that US plans "in the event of war envisage the swift deployment of all forces which have been brought or are being brought to a state of full combat readiness... these conditions require the existence of actual ready reserves in the first place and corresponding reserves of supplies and weapons. It is quite impossible to consider that civilians can be militarily trained and civilian industry switched onto military tracks after the war has begun" (Foreign Affairs, April, 1964).

Consequently, in their opinion, it is unrealistic to count on augmenting strategic efforts by placing new, more modern ships in the fleet during the beginning period of the war.

The very picture of military operations in naval theaters is substantially changed. The nuclear strike has taken the place of the previous battle of groups, let us say, of task forces of large surface ships which conducted prolonged, single battles and which suffered, as a result, approximately equal losses. It can be delivered by submarines, aircraft, or these and others jointly. Thus, a nuclear strike against surface ships, is, in essence, a one-sided action: rocket-carrying aircraft or submarines can use their weapons without entering the surface ships' effective ASW or PVO range. The latter, not able to counterattack the weapon carriers, must destroy weapons, the rockets, themselves or evade them.

In these conditions success may be predetermined, not by additional forces being put into action and not even by a corresponding number of guns, nuclear charges, the speed of ships, and other factors, but primarily by how much the attackers succeed in achieving surprise, in selecting the optimum form of maneuver and in selecting the array of forces sufficient to destroy completely the detected enemy group. If this is achieved the enemy can be destroyed as the result of one single effort -- one short but powerful strike. Consequently, the necessity of augmenting efforts, when applied to conditions for conducting military operations at sea, which are carried out with the object of destroying enemy groups of ships, is no longer practical.

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The author considers that weakening the side of the opposing side by partially or fully isolating them from the rear, by destroying strategic reserves and actively struggling to interdict ocean and sea lines of communications would, though indirectly, lead to an augmentation of efforts. Of course, operations to isolate enemy groups from the rear will have important significance. If the enemy attempts to organize the transference of reinforcements to a given sector, then it most likely will be only to make up for some of the losses suffered. It will hardly be possible to achieve a significant transfer of forces and equipment in such a manner.

The American military command suggests that air transports be employed in order to relieved from shipping by sea in the beginning of the war. But with the destruction and devastation which can be rendered by nuclear-rocket weapons on a theater of military operations, to fully replace force and equipment losses by air transportation will not, undoubtedly, be possible. If reinforcements are made in a theater of military operations, significantly less effort will be required for their annihilation than for the defeat of basic groups of forces which are established and concentrated in a given theater of the eve of the war.

Thus, the concept of the augmentation of strategic efforts continues, in our opinion, to lose its meaning because its main content in the past -- the maintenance of constant superiority of forces over the enemy -- may now be achieved by methods completely different than before. In part, the concentration of large groups of troops, artillery, and aircraft in a given sector is not required. The delivery of powerful nuclear-rocket blows against a resisting enemy, the correct selection of the moment of delivering them, and the selection of corresponding targets enables the superiority of the enemy to be reduced to zero on any sector, both in the beginning of the operation as well as during its development. To do this it is necessary to execute a flexible maneuver by forces and means, including rocket trajectories, between separate sectors as well as within their boundaries.

However, it is still premature to depart completely from this concept. Applied to certain situations there are possibly times, even in a nuclear-rocket war, when an augmentation of efforts analogous to that which occurred in the past is required, as, for example, when repulsing an air attack, for operations involving chasti and soyedineniya of mechanized troops, and when landing forces and forcing water barriers. But such cases cannot in themselves represent the general rule, but are exceptions and will take place on an operations and, particularly, a tactical scale.

And in conclusion -- the elements for augmenting strategic efforts. The author of the article regards them as maneuver by strategic rocket means, by strategic aviation forces, by forces and means of the branches

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of the armed forces, the employment of the armed forces of states which have entered the war on the side of a given coalition, measures for weakening the operating strategic groups of the enemy, and also the skillful maneuvering of the material and technical means, nuclear weapons and forces and equipment of the branches of the armed forces.

Through this treatment of the question the identification of the forces and equipment used to augment efforts, with the methods for employing them, is achieved. It would follow, in our opinion, to insert into the concept of "elements of the augmentation of strategic efforts" the forces and equipment which can be utilized in military operations and to relate maneuver by forces to methods for effecting augmentation.

by Maj Gen Sig Trps I. KURNOSOV

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The effective use of nuclear weapons, which are the main means of destruction, and the successful operations of all branches of the Armed Forces in modern war depend very much on the availability, perfection, and operational reliability of technical means, primarily of radioelectronic equipment used to control troops, combat systems, and weapons of armies and navies.

Complex and responsible tasks concerning the achievement of a harmonious coordination between the technical development of radioelectronic means of control, including methods of their application, and the level of development of the means of armed warfare confront military specialists of corresponding fields of knowledge.

We shall consider that part of these tasks which is connected with the control of troops and weapons.

A multitude of extensively used devices of various designs make up the radioelectronic means of troop control employed in modern conditions. These means include radios and radio receivers, radiorelay stations, video communications apparatus, and devices which improve the effectiveness of wire communications.

It is well known that the single-channel simplex radios of World War II as well as the radio communications channels which they formed were sufficiently perfected for that time, but could not satisfy postwar requirements. On the basis of the achievements of science and technology in the armies of the leading countries, a gradual process was begun for the qualitative improvement of radio communications. Obsolete radios were replaced by more mobile single-band, duplex, and multi-channel radios which had increased range, speed of operation, and reliability.

With the implementation of short-wave and ultrashort-wave radios, much attention was paid to the development of radiorelay stations to combine the positive aspects of radio communication with the advantages of wire communications. Radiorelay communications have provided a solution to the most important problem of providing for the passage of a large flow of information with sufficient reliability of transmission and have met all demands placed upon them if the necessity of having a large number of relay stations is not taken into consideration.

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However, in spite of many advantages, there are also disadvantages when a large number of relay stations are operating, interference is increased on the lines and it is easier for the enemy to employ countermeasures.

It became possible to overcome this serious disadvantage when tropospheric radio stations were developed in many countries. Tropospheric radio stations operate by using the phenomenon of the diffusion propagation of radio waves in upper layers of the atmosphere.

Tropospheric stations have overcome the basic disadvantages of short-wave and ultrashort-wave communications, including radiorelay communications. Operating within a rather wide range of frequencies, they provide radio communications over distances of 400-500 kilometers without relay stations.

By combining a large number of communications channels with a significant increase in range, tropospheric equipment allows communications systems to be set up differently, the time spent on laying long lines to be shortened, the reliability of the operation of the system to be sharply increased, and the requirements placed on equipment and personnel often to be decreased. Instead of 20 intermediate radiorelay stations on a 1,000 kilometer line, only 3-4 tropospheric stations are necessary.

However, these are not the only advantages which have drawn attention to tropospheric communications. The use of these stations is most effective in sparsely populated areas of the far north and in deserts where it is difficult to maintain many relay stations. The US was first to use tropospheric stations in arctic areas. One such line connects the coastal regions of Alaska, British Columbia, and the United States. It has a capacity of 240 telephone and telegraph channels.

It would seem that all problems connected with providing reliable multichannel radio communications were solved with the introduction of tropospheric radio stations. However, it soon was evident that only one technical aspect of the problem was solved. With all elements remaining stationary, especially in an air defense system, the use of tropospheric stations obviously is useful from any point of view. But these stations were not advantageous in mobile communications nets because of their poor maneuverability. Large power transmitters of ten or more kilowatts and cumbersome antenna systems were necessary for reliable communications.

Subsequent achievements of radio electronics allowed stations to be developed which operate on the principle of ionospheric scattering. In contrast to tropospheric stations, these ionospheric stations operate within a narrow band spread of 20-50 megacycles, but they are as difficult to maneuver as tropospheric stations.

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It has been reported in the US press that high altitude nuclear explosions have considerable effect on communications based on the use of tropospheric and ionospheric scatter and disturb their operation for long periods of time.

Presently new ultrashort-wave radio stations operating on a principle using the ionized trails of meteorites in the upper layers of the atmosphere are almost in the operational stage in the armies of the major countries.

When analyzing the technical capabilities for providing communications in modern warfare, it should be considered that it would be difficult at present to name any universal means which would completely fulfill all requirements for controlling troops and weapons. For this reason it is very important to make use of all available means of communications, giving preference to one or another according to concrete conditions.

With the extensive use of radioelectronic devices for controlling troops, many other shortcomings appear, besides those already mentioned, which decrease the reliability of communications. Interstation interference arises between operating radioelectronic devices, especially when they are located within a limited area as may be the case with tanks, aircraft, or ships. Thus, the development of equipment which can provide reliable communications in conditions of strong interference is a very important task for radioelectronic specialists.

In this respect work abroad is being conducted in two directions. First, measures are being taken to increase the interference-killing features of conventional radio stations by several means, in particular by using a one side band of a radiated spectrum for communications, employing more effective antennas, carefully selecting frequencies with sets which automatically search and tune them, increasing the output of transmitters and the selectivity and sensitivity of receivers, using various filtering attachments, and training specialists in the skills of working in conditions of strong interstation, natural, and man-made interference.

Second, radio communications systems are being used which are based on new principles to find a radical solution to this problem. In particular, the development of the secret and reliable systems called the Phantom by General Electric and the Rasep by Martin Orlando has been reported in the press. Both are based on the principle of using a wide frequency spectrum. They have a high resistance to interference from stations operating near by, provide signal secrecy, and allow for high speed of transmission. According to its manufacturer, the Phantom system will function satisfactorily even when the enemy knows its general principles of operation and its operating frequencies. The Rasep apparatus has even better characteristics. Such systems greatly increase the stability of radio communications in conditions of strong interference.

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Intercommunication and remote control by radio and radiorelay means of laying cables in a command post, for example in a front-line ob'yedineniye, over 200 kilometers of cable must be laid, which requires much time, and the stability of this type of communications is very low. When control posts are being moved, this problem cannot be solved with the aid of wire communication.

Presently attempts are being made to develop radiotelephone stations which would be analogous to conventional telephone stations without connecting wires. These stations are often referred to in the press as automatic radiotelephone systems. The AN/MRC-66 mobile radiocommunications system developed in the US Army is one such radiotelephone station. The system consists of one central and 16 subscriber stations and allows duplex, two-way telephone conversations to be held simultaneously. The subscriber station equipment is installed in small vehicles. The power and consequently the range of these stations can be regulated. They may be operated within 15-20 kilometers of the central station.

Besides communication between functionaries of control posts, it is possible with this or a similar system to go from a subscriber station to a radio or radiorelay station to receive communications over longer distances. When similar systems are used in large control points, the number of subscribers can be increased, the mobility of the posts themselves can be improved, and certain conveniences can be obtained by using the radio and radiorelay communications channels while in movement.

Attempts to use higher frequencies in areas of radioelectronics have been noted in foreign armies. What is called the problem of closeness in either is successfully solved by transferring to these frequencies. While the transmission of a television picture is not possible by long and medium waves, a large number of high quality radio transmissions are practical and 12 television channels can be easily used in a small portion of the meter waves. Several thousand television channels are practical with decimeter and centimeter waves. In the centimeter wave band, one transmitter has such a wide range that all radio transmissions conducted on long, medium, and short waves can be completed.

Also, by decreasing the length of the wave, the capabilities of radar and radio telematics are increased since the directivity of radiation is increased which in its turn provides higher accuracy in determining the coordinates of targets in space and greater range for radiotechnical devices.

When all of these circumstances are taken into consideration, it becomes evident that there are many possibilities presented by transferring to infrared and light rays. The amount of information which can be transmitted by one transmitter and the accuracy of determining coordinates are sharply increased in these frequency ranges.

In spite of so many obvious advantages, infrared and light rays have received very limited use until now. One of the reasons for this is the difficulty of generating and amplifying electromagnetic oscillations in these frequency ranges.

According to the foreign press, intensive work is currently being conducted to decrease the length of the waves generated by ordinary superhigh-frequency generators. The development of these shorter wave lengths is based on the use of klystrons, magnetrons, and other electronic devices. The essential part of all of these generators is the cavity resonator which must be of a size that approximately corresponds to the length of the wave of the generated oscillations. Obviously the preparation of these resonators for wave lengths smaller than one millimeter is a very complex technical task.

Lately a completely different means, the use of maser amplifiers and generators, has been suggested to solve the problem of decreasing the length of the wave of ordinary superhigh-frequency generators. Their principle of operation is as follows. As is known, atoms and molecules are always in certain energetic conditions or, as is usually said, on certain energetic levels. Transfer from one such condition to another is accompanied by radiation or absorption of a strictly determined amount of energy. If the energy is divided into electromagnetic oscillations, their frequency depends only on the difference between the initial and final energetic condition of the atom or molecule. Consequently, electromagnetic oscillations of practically any wave length may be achieved with this method.

Generators constructed on this principle are being used extensively for communications with space ships and between space ships. When the distance between two stations is increased, the directivity of radiation must also be higher to develop sufficient voltage at the receiver input if the transmitter continues to use the same power. The inherent small size of maser generators causes them to be far superior to other generators in regard to directivity of radiation. Transformed solar energy may be used as a source of power for them. The use of maser instruments also presents significant possibilities for ground radio communications. A practically unlimited number of telephone conversations and television programs may be transmitted and received by means of one such instrument.

The use of maser instruments in radar also presents great possibilities. Ordinary radars cannot differentiate between targets located near one another because of their wide antenna radiation patterns. High directivity of radiation greatly corrects this shortcoming.

The possibility of using artificial earth satellites to increase the range of communications on ultrashort-waves was first noted by Professor P. V. SHMAKOV of the Leningrad Electrotechnical Institute. When the Soviet Union launched the first artificial earth satellite in 1957, the realization of this idea became practical.

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Presently foreign scientists, in particular in the US and England, are conducting theoretical work and often experimental tests using artificial earth satellites as passive and active relay stations. A passive communications satellite is a metallic or metallic covered sphere with a diameter of several dozen meters. When radiations from a powerful earth radio station are directed to such a metallic sphere, it becomes a source of secondary radiations which may be received at other places on the earth's surface when the artificial satellite is within their line of sight. An active communications satellite must contain reception and transmission equipment with antennas and power sources. Thus, this type of communications satellite operates like an ordinary relay station in line radio communications.

An active communications satellite may be used in either low or high orbits. When these satellites are used in low orbits they are equipped with devices to store information when passing over a correspondence station and to transmit this information when the satellite is within line of sight of a second station.

Direct communications between ground stations by means of an artificial satellite can be achieved by placing the satellite in a high orbit. When an artificial satellite is in an orbit of approximately 5,000 kilometers, direct communications can be maintained over a distance of 4,000 kilometers. However, this communication will not be continuous since the satellite is within line of sight of a point no longer than 30 minutes when the satellite has a period of revolution of approximately 3 hours. Calculations have shown that 28 of these satellites must be launched and placed in a polar orbit at altitudes of approximately 5,000 kilometers to maintain continuous communications.

The use of an active communications satellite moving in stationary, i.e. 24 hour, orbit at an altitude of approximately 36,000 kilometers, thus completing one revolution per day, presents greater possibilities for achieving long-range communications. This satellite would always be located over the same point on the earth's surface.

Wire means of communications have undergone extensive changes chiefly under the influence of radioelectronics. High-frequency telephone and telegraph equipment which can use one two-way line to provide a large number of communications channels is finding wide use in wire communications. Balanced cables can be used for several tens and hundreds of telephone channels and coaxial cables can handle over a thousand such telephone channels. The secondary multiplexing of coaxial cables allows them to have several telegraph communications channels in place of one telephone channel.

Special attention is being paid to the problem of mechanizing the laying of cables for wire communications. There are devices abroad which allow underground cables to be laid at a speed of 4-5 kilometers per hour.

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Experiments are being conducted with helicopters to increase the tempo of these operations. However, some problems are not yet solved, for instance that of joining individual operating segments of heavy cables and covering lines.

There is no doubt that with sufficient development of multiplexing equipment, wire communications will be used extensively in modern operations in connection with radiorelay communications. Their value is increased in those conditions when radio communications may be hindered by manmade radio interference and cannot be used to control troops.

The use of video communications for controlling troops is often met with in literature. Facsimile radio, video telephone, and facsimile television communications and television are all understood by the collective term video communications.

All of these types of transmission, except facsimile radio communications, require very wide channels and are practical only when used on multichannel radiorelay lines. In view of this, the US Army doubts very much the expediency of the extensive use of television, facsimile television, and also video telephone communications for controlling troops.

It is perfectly acceptable to use standard telephone channels for facsimile radio communications. Facsimile radiocommunications apparatus is now available which allows large messages to be transmitted at high speed. This equipment is especially important for the rapid transmission of maps, graphs, charts, and drawings.

In regard to television communications, certain excessively optimistic opinions, including those of the US Army, have been changed to more sober judgments concerning its capabilities. Admittedly aerial reconnaissance is the only realm in which television is now being used. Further experimentation is being conducted to develop sufficiently perfected television equipment and methods for using it for troop control.

Of course, as radioelectronic means of control are perfected, the methods of their use are modified. The development of tropospheric and ionospheric communications equipment, the evaluation of multichannel wire and radiorelay systems, and the achieved use of artificial earth satellites for communications, which have all taken place in the better developed countries, allow a global system of communications which operates reliably in any conditions to be established. Considerable attention is being paid to secret communications, the speed with which they can be set up and used, their maneuverability, and their invulnerability from fire and radiotechnical influences.

Modern communications systems will be an aggregate of technically developed nets and communications stations which are interconnected by various multichannel lines. In accordance with inherent requirements,

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a system of control will always be developed for each system, but all systems
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and battle. Finally, the development of radioelectronics makes it possible
for commands and staffs to utilize modern means of warfare effectively and
exercise accurate troop control.

The use of radioelectronics for control of combat means is becoming
even more widespread. It is difficult to find a means of combat whose
effectiveness to some degree is not dependent upon radioelectronics. It is
not surprising therefore that the expenditures, for example, on the radio-
electronic equipment of modern aircraft or spaceships is approximately half
of their total cost. Without radioelectronics, long-range rockets would be
simply unthinkable.

The use of radioelectronics for controlling weapons and equipment is
called telematics or radio telematics. In the military, telematics
are most widely used in various systems for controlling and guiding various
types of rocket weapons. They are also used in systems of autonomous
control, in which all necessary equipment is installed in the missile or
rocket and the flight order is determined prior to launch, and in remote
control systems, in which the flight of a missile is corrected by commands
or signals which are sent from ground stations. Another wide application
is in homing systems in which the missile is guided to the target by
signals radiated by radar apparatus on the missile and reflected by the
target itself. Finally, missiles may be guided by radionavigation equipment.

There is no need to elaborate on the importance of the role of radio
electronic equipment on guided missiles, for without it their effectiveness
would be so decreased that in general their use would not be expedient.
Radioelectronic equipment is also used to control surface ships, submarines,
and torpedoes, and for the remote control of mine fields

Lately the use of radio telematics for controlling aircraft has
received wider use. This is especially important when conducting aerial
reconnaissance over regions strongly protected by means of air defense and
when testing new types of flying apparatus. With the high speeds of modern
combat aircraft it would be difficult to vector an aircraft to a target
without special radioelectronic systems. Therefore, such systems are finding
ever increasing use in both air defense and aviation.

Radioelectronic systems are used in many armies to control cannon and
machine guns, particularly on ships or heavy aircraft.

The triumph of radio telematics is the development and use of
apparatus to control the Vostok spaceships whose launch, flight, and landing
was carried out by the USSR with astonishing precision by radioelectronic
equipment.

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Telemechanics present important possibilities for controlling tanks, armored transporters, and other combat machines when they are passing through areas of strong radioactive contamination.

Electronic computers are a special form of the use of radioelectronics in military affairs and one of its greatest achievements. Presently many problems involved in the control of combat weapons and troops are being solved with electronic computers. Theoretical research is being conducted in the armies of the best developed countries and the first steps have already been made for developing a complex automated system for controlling troops and combat equipment.

As reported in the foreign press, several automated systems of control may be used in the armed forces, for example, in combined-arms, rocketry and artillery, rear services, or air defense systems.

It must be pointed out that communications channels which permit the transmission of large flows of information with high accuracy, for instance no more than one distortion for 100,000 signs, are necessary for the successful functioning of such a system. Thus, much effort must be directed toward replacing several existing means with more perfected ones.

Electronics computers in automated control systems can summarize, process, and visually portray data on friendly troops, enemy troops, and the character of terrain. They allow operational and technical calculations to be made on the correlation of forces; the combat use of nuclear weapons, aircraft, air defense means, and radio countermeasures; and material and technical support. Ground and aerial situations can be portrayed and various types of reference data can be received on the output devices of electronic computers.

The increasing use of various radiotechnical devices for controlling troops and combat equipment has correspondingly increased the capabilities of radio reconnaissance which is one of the most important aspects for providing control. During World War II the German intelligence received over 70% of their data on the enemy by means of radio reconnaissance. Presently almost all devices used for military reconnaissance are based on the use of radioelectronics. These include radio direction finders, radars, sonars, heat seeking devices, radio receivers of various systems, infrared equipment, et cetera.

Foreign armies conduct radio reconnaissance by using radio receivers for search and intercept with automatic tracking and visual portrayal of the intercepted signal. Supplementary attachments to this equipment allow the interception of such difficult transmissions as rapid operating, printer, multichannel, and multiplex transmissions. They can also be used for decoding and performing technical analysis of the complex forms of received signals. The location of operating transmitters can be quickly and precisely determined by means of radio direction finders.

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Radiotechnical devices used for reconnaissance of various military objectives and targets are especially important. These include a multitude of various radar devices which permit the detection and surveillance of aerial, ground, or underwater targets at long range and without regard to their speed.

Air defense and radar reconnaissance would no longer be effective without the extensive use of radar. This equipment may be used to observe aircraft, cruise missiles, and ballistic rockets and to locate various combat equipment to aid in the development of necessary conditions for the destruction of these targets.

The most valuable quality of radio and radiotechnical reconnaissance is not only that it can locate targets, but that it can constantly produce the coordinates of these objects while they are in movement at long range and at high speed regardless of the time of year, time of day, or weather conditions. While radiotechnical devices are carrying out this most important function, they remain essentially unnoticed by the enemy.

There is every reason to believe that the role of radiotechnical means for conducting reconnaissance will grow in step with the extension of their use for controlling troops and combat equipment.

A great many various measures designed to suppress the operation of radioelectronic apparatus are being studied in countries hostile to us. Consider only the question of using radiotechnical equipment, as advocated by the foreign press, interfere with enemy means for controlling troops and weapons.

As in other realms of military affairs, the role of radioelectronics cannot be overevaluated easily here. Disruption of the operation of the radioelectronic devices, for example, in antiaircraft defense and especially antirocket defense in a general sense eliminates these systems. It is not surprising therefore that the main efforts in the realm of combatting enemy radioelectronic means is directed toward suppressing various radiotelemetry devices which are the basis of the control of weapons and combat equipment.

It has been noted that work is being conducted in two main areas. One area envisages the development of systems which interfere with the operation of radiotechnical devices mounted in weapons of attack. Large power transmitters deployed on the ground, in aircraft, and on ships or radiation apparatus in antimissile missiles may be used for this purpose. The other area includes the development of means for suppressing a communications system to a degree that the necessary commands for bringing various combat complexes into combat readiness can no longer be transmitted.

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Both of these methods are combined into a defined principle governing their use. Approved For Release 2000/08/09 : CIA-RDP85T00875R000300090002-4 systems are equipped with radiotechnical devices to some degree and since their effective use depends on reliable and accurate operation of radio-electronic apparatus, means of combatting enemy radioelectronic systems receive a great amount of attention in the armies of the NATO countries. Basic emphasis is being placed on increasing the speed of detecting operating radioelectronic systems and the accuracy of their suppressing them.

Lately many books have been published devoted to such subjects as radio countermeasures, radio warfare, and combatting enemy radioelectronic weapons. Often claims are made in literature concerning the possibility of completely suppressing radiotechnical devices and cutting off the control of troops and combat complexes. Of course, the perfection of means for creating radio interference and the development of methods for using them are very important tasks. However, it must not be forgotten that radiated interference not only has an effect on the radioelectronic equipment of the enemy, but on that of friendly troops. For this reason the mass usage of all means will occur only in those cases when it is not necessary to use friendly radiotechnical means which operate within the same range of frequencies. Obviously, these moments are rare in modern highly maneuverable combat action and the question of this usage of radio suppression means will have to be decided individually on the basis of the complexity of a situation.

All of these problems have caused radioelectronics specialists to explore new frequencies, other methods of generating these frequencies, and new ways for using radio interference means to derive a maximum effect without influencing the operation of friendly radiotechnical means.

The basic developmental directions for the use of radioelectronic equipment to control troops and combat equipment have been pointed out in this article. There are many other realms of military affairs where radioelectronic means are considered as an organic or very important part of equipment. Finally, it must be said that the status of the technical equipment of the armed forces, the increase in effectiveness of the means of air defense, and the status of a defensive capability are completely dependent upon the level of the development and introduction of radioelectronics.

by Maj Gen Intend Serv A. MOSKVIN,
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Operations analysis is a new area of science which has not yet been completely formulated. Possibly this is the reason why the development and implementation of the methods of operations analysis sometimes encounter incorrect understanding of the substance and problems of this scientific area on the part of certain generals and officers. Upon consideration of the great importance of the extensive use of operations analysis methods in military affairs, the conclusion must be drawn that the publication of the article, "The Substance and Problems of the Theory of Operations Analysis," (Voyennaya Mysl', No 7, 1963), was timely and very useful.

The large number of comments which have been received concerning this article indicate that the generals and officers of our Armed Forces have a great interest in this scientific area.

As was correctly noted in the majority of the responses, the article contained many correct ideas and interesting thoughts, but at the same time it contained many imprecise formulations and debatable statements which have been the cause of much enlivened discussion.

The topics which evoked the greatest differences of opinion were the definition of the theory of operations research, the role of the commander in the decision making process, the classification of accepted methods of analysis, and the interrelation between the theory of operations research and other sciences, particularly cybernetics.

We shall attempt to examine and analyze critically some of these topics.

Two definitions of the theory of research analysis were presented in the first article. The first was, "The theory of operation research determines and analytically describes the natural laws in various processes to achieve quantitative foundations or recommendations based on quantitative foundations for making decisions" (p 17). The second was that "operations research is the theory of making decisions. It establishes general laws for the processes of making decisions in many practical areas and produces general methods for investigating and finding optimal solutions to a great number of practical problems" (p 26).

It seems to us that the first definition should not indicate that the laws of a process are described analytically since in certain cases they may be described by other means, for instance statistically. The second definition

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identifies operations analysis essentially with a theory of decision making whose very existence may be doubted. It was not by chance that many authors of responses objected to these definitions and offered their own which were not always unsuccessful. Thus, Engr-Maj Yu. PEVNITSKIY wrote, "the theory of operations analysis is the scientific discipline concerned with the analysis of similar elements of different operations or organized action, the structural unification of different elements, the discovery of similar structures, and the development of models of operations and their quantitative analysis to achieve a scientific basis for the rational decisions made by the executive organs in the process of control" (Voyennaya Mysl', No 2, 1964, page 39).

In our opinion this definition correctly states the basic purpose of the scientific discipline under consideration here, but its formulation has two essential shortcomings. First, in spite of the fact that many words are used, it contains terms which in themselves need defining, such as elements, structures, and similar elements. Second, there may be operations which do not have similar elements and similar structures. A special instruction for the determination of topics which are completely divorced from operations evidently would not seem rational.

Now let us consider the definition given by Maj Gen (Res) M. SMIRNOV (Voyennaya Mysl', No 12, 1963, page 38). Concerning the object of the theory of operations analysis, he writes, "this is the analysis of the many various processes and phenomena of armed combat; the character of the combat activity of troops; the problems of commanding them in a nuclear and rocket war; the application, use, and design of weapons and combat equipment; and the methods of the troop control."

This definition restricts the theory of operations analysis completely without basis. It would be supposed that this theory is of no concern to operations of a nonmilitary character. This definition also has other insignificant shortcomings.

It seems to us that before expounding on a concept of the theory of operations analysis, we should determine our concept of operations in the wide sense of this word.

The overwhelming majority of Soviet and foreign scientists working in this area understand operations to mean the process of the work of people and machines organized for the execution of determined tasks. On the basis of this definition we allow the inclusion of a great number of processes related to military affairs, economics, and other realms of human activity which have many analogous qualities. This last condition allows similar mathematical methods to be employed for analysis of these processes.

This broadened interpretation of the term operation is objected to by many military specialists who have become accustomed to using this word in its narrow sense in strategic operations, frontal operations, etc. However,

wide sense of the word is so widely accepted, as we have already stated, that there is obviously no sense in using a new word for this same meaning, although in principle the use of any new term is possible. The following may serve as examples of the simplest operations or combat processes which are studied by mathematical methods: The processes of searching for and detecting targets in aerial reconnaissance and detection by air defense, antimissile defense, antisubmarine warfare, and other systems; the processes employed by complexes for the destruction of enemy targets, such as the launching of ballistic rockets, firing artillery, bombing from aircraft, etc.; the processes employed in defensive complexes, including both active and passive means; the processes employed in deploying troops, combat equipment, and support elements; and the processes employed in controlling the combat activities of troops.

The subject or object of analysis in the science under consideration here is the process which is directed to the achievement of a determined goal. Thus, the process is understood as a whole phenomenon with all the various factors which determine its direction and final result. After the understanding of the term operation in the wide sense of the work is understood, a definition of the theory of operations to work out quantitative bases to make decisions or give orders.

Professor Ye. VENITSEL' correctly pointed out in his article that the course of a process is usually determined by three groups of parameters:

1. Parameters which are determined beforehand and are not dependent on us. These include the characteristics of means being employed and the laws of nature which influence the course of a process, etc.
2. Parameters whose value must be considered as recommendations for making a decision.
3. Chance factors which are not precisely known and are not dependent on us, i.e., those factors which are governed by the laws of probability or improbability which, for example, include enemy operations (Voyennaya Mysl', No 4, 1964).

When working out quantitative bases for making a decision, operations analysts are concerned with the study of the influence of chosen values of parameters of the second group on the course of a process and its result. We recall that the choice of the parameter values of the second group also determines the decision for controlling operations. Having considered that certain parameters of the first and third group may have different values in different situations, operations analysts consider the many variants of the different values of the parameters of the indicated groups. Thus, operations analysis is used for making a basic decision with any given parameter values of the first and third groups, i.e., in any given conditions.

The theory of operations analysis has characteristic features:

1. A given process is studied as a whole. In other words operations analysis is characterized by a transfer from analysis of individual stages

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and aspects of a process, which is the concern of various special sciences such as the theories of firing and bombing, the theory of effectiveness, etc., to the complex consideration of processes. 2. As a rule mathematical models of processes under study are developed for analysis. Depending on the character of a process and the goal of the analysis, models may differ both in the application of mathematical methods and in the character of the assumptions, for instance simplifications accepted in constructing the models. 3. Objective laws of a process are discerned by using mathematical models. Mathematical models make it possible to derive quantitative bases for selecting rational means or plans for controlling a process. 4. The latest computing equipment, means of communication, mapping, etc. are used in conducting operations research.

The purpose of the analysis of a control process and the role of a commander in making a decision are very important to this discussion. We shall present our understanding of these topics.

Ordinarily a rational decision is predetermined by the goal and tasks of operations, i.e., it is directly dependent upon them.

Goals and tasks cannot always be successfully expressed identically, i.e., by means of a single formal criterion. For example, when conducting combat operations, we are of course interested in inflicting the largest possible losses on the enemy and keeping our own to a minimum. However, the time in which a combat operation is carried out is also important. Of all possible plans, the one which permits a combat assignment to be executed in the shortest time may be selected, but this plan for conducting an operation does not always keep the losses of our reserves to a minimum. The following example may illustrate this point.

Suppose we have a combat assignment to seize a fortified town. It may be taken by frontal assault. The losses inflicted on the attacking troops is usually great, but the assignment is completed quickly. This same assignment may be executed by laying siege to the town and bombarding it with means of destruction. After a long period of time the enemy will have to surrender the town without offering serious resistance. The second method requires much more time, but it allows the combat assignment to be executed with fewer losses of our troops in comparison to the losses which would have to be endured in taking the town by frontal assault. Thus, if the criterion of the plan of operations is the time required for the execution for the combat assignment, preference must be given to the frontal assault. On the other hand, if the criterion is the losses of our troops, laying siege to the town is to be preferred. Mathematical methods permit the optimal decision to be found with any criteria.

As long as we are interested in the losses of our troops, the enemy losses, and the time for executing combat assignment in planning operations, the following usually occurs. A basic or main criterion which produces

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Optimal results is selected from all criteria under consideration. However, a plan of operation is not selected from all possible plans, but only from those in which the requirements of other criteria are met. For example, enemy losses may be selected as a basic criteria. Then, a plan is searched for which will achieve maximal enemy losses while our losses and the time required for the execution of the assignment do not exceed established requirements.

The choice of a basic criterion and conditions limited by other criteria is not made on the basis of one combat assignment, but with calculation of the more general problems of conducting a war. Existing mathematical methods do not yet make it possible to derive constructive methods of choosing a basic criterion and limiting conditions for particular operations. The solution of this problem is presently entrusted completely to the commander, i.e., to the person or organ entrusted with making the decision. Obviously the collection of quantitative bases for making a decision is not a single act. After receiving the results of calculations, the commander may suggest that repeated calculations be carried out in view of changing limiting conditions, criteria, etc. The process considered here is essentially a process with feedback in which the final choice of a decision remains with the commander.

It must be noted that ordinarily a mathematical model of a process used to derive quantitative bases does not fully reflect the process itself. It is constructed by schematizing the process and does not take into consideration many factors which may be essential. A commander cannot avoid the influence of these factors when making a decision. This circumstance reemphasizes the fact that the decision must be made by the commander and that operations analysis like the automation of control does not decrease the role of the commander but broadens his capabilities. Thus, we must agree with the critics that the article imprecisely determined the distribution of functions between commanders and operations analysts and did not emphasize the decisive role of the commander, namely that he is the person responsible for making the decision (Voyennaya Mysl', No 7, 1963).

Some authors note correctly that a commander must have a definite understanding of mathematics to skillfully evaluate and knowledgeably utilize the potential of mathematical methods and the results achieved through analysis.

The article, "The Substance and Problems of the Theory of Operations Analysis" suggested that two different methods of mathematical prediction be differentiated as mathematical modeling and estimating effectiveness. This suggestion evoked criticism from several authors and not without reason. Any model used in operations analysis as a rule determines the idea of effectiveness to a certain degree. Mathematical models must be constructed to determine effectiveness. Thus, there should hardly be any thought of dividing the methods of operations analysis into methods for evaluating

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effectiveness and mathematical modeling. Mathematical modeling as a rule is not done as an end to itself, but to evaluate effectiveness and determine the dependence of effectiveness on many factors.

Much attention has been devoted to whether operations analysis is an organic part of cybernetics. Here, we are in complete agreement with the opinion of Professor Ye. VENTISEL' who suggested that there was hardly any need for discussion of this question since nothing could be gained by it. (Voyennaya Mysl', No 4, 1964).

We shall touch briefly on the question of the interrelationship between operations analysis and military art. It is well known that the use of mathematical methods in the natural sciences produces very advantageous results. It makes it possible to express clearly and concisely those existing laws inherent in phenomena. However, the use of mathematics does not replace the work of appropriate specialists, but enriches and broadens their capabilities. In spite of the many peculiarities of combat operations, they lend themselves excellently to the use of mathematics in military analysis. Military art is not replaced by these analyses, but instead receives a powerful supplementary tool which has justified itself many times in various realms of science.

Close relations between military art specialists and specialists in the theory of operations research makes it possible to derive more valid and thorough conclusions. A definite knowledge of mathematics on the part of specialists in military art and a thorough knowledge of military art on the part of operations analysts are essential aids in the fruitful development of military art and the theory of operations analysis.

We note in conclusion that publication of the article "The Substance and Problems of the Theory of Operations Analysis" in the journal Voyennaya Mysl' and the subsequent discussion are of great use. First, in spite of the many points which lend themselves to argument, the article contains new and interesting opinions. Second, the discussion is attracting the increased attention of military specialists to developments in the realm of operations analysis.

We are in complete agreement with the position of Professor Ye. VENTISEL' that this journal should often publicize examples of successful decision making involving methods of operations analysis. This will be the best presentation of the most extensive use of these methods.

THE 20TH ANNIVERSARY OF THE CZECHOSLOVAK NATIONAL ARMY
by Army Gen. Bohumir Lomsky, Minister of National Defense of
Czechoslovak Socialist Republic

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In the fall of 1964 the entire Czechoslovak nation observes the 20th anniversary of the Slovak national uprising and the 20th anniversary of the Karpatsko-Dukelsky Operation, during which troops of the 1st Czechoslovak Army Corps in the USSR marched onto the territory of their fatherland side by side with the Soviet Army, having seized Dukla Pass in sustained battles.

The Czechoslovak National Army has traversed a glorious path. The process of its building is inseparately linked with the struggle against fascism, with the development of our whole society, from the national democratic revolution and victorious February to the victory of socialism in Czechoslovakia, and with the building of a well-developed socialist society in the glorious days of present times.

Every country has bright and shady pages in its history. In the joyous present-day realities of socialist construction we ought to remember those events which are dismal chapters in the life of our nation. To those chapters belong the Munich agreement and the subsequent period of occupation of the fatherland by Hitler's Germany, bringing to our people, just as to the other enslaved peoples of Europe, infinite suffering.

The Czech and Slovak peoples, despite the cruelest persecution from the fascist occupants, remained unsubdued and carried on the struggle against fascism with guns in hand not only on the territory of our country, but also on all fronts of the Second World War. Our people understood well at their most difficult hour that not everyone who pretended to be a friend and ally of Czechoslovakia was determined to prove this by their deeds. The so-called western allies treated us this way.

As they say in a popular proverb -- a friend in need is a friend indeed -- the Czechoslovak people are again convinced that their sole friend and real ally is the Soviet Union, which openly and repeatedly warned of the eminent danger of Munich and consistently and boldly defended the interests of the Czechoslovak people. To it belongs the highest merit in liquidating the consequences of the shameful Munich capitulation.

On the eve of the 20th anniversary of the Czechoslovak National Army we can confidently say, judging by the path covered by it, that thanks to the great friendship and alliance with the Soviet Union and its army, thanks to our membership in the mighty world socialist system and the organization of the Warsaw Treaty, we can now direct all our efforts to making our fatherland more beautiful, richer, and stronger, and gather strength

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I

In 1938, the fatal year of the Munich agreement, communists were the only political force in our country demanding that the Czechoslovak army be ready to defend our fatherland in the face of the growing threat of aggression from fascist Germany.

However, disregarding national interests, the ruling Czechoslovak bourgeoisie and the then military command capitulated at the decisive moment and surrendered the nation to Hitler into slavery. At first Czechoslovakia was broken up and then, on 15 March 1939, it was occupied. The army's munitions fell into the hands of the aggressor. The nation was consciously and deliberately disarmed.

But the Czechoslovak people did not give up, did not capitulate. The struggle against enslavement of the country by Hitler's imperialism became the main turning point in the development of Czechoslovakia. Only a struggle against the occupation could help us win freedom against and restore the sovereignty of Czechs and Slovaks.

The program developed by the Communist Party of Czechoslovakia for a national liberation struggle was based on the party's policy in the period of the growing fascist threat to our republic. It was a continuation and development of that policy. It envisaged not only restoration of the Czechoslovak State, but also a struggle for something really new, for a national democratic Czechoslovakia.

To do this, it was necessary to expand the struggle of the whole country against the occupation forces under the leadership of the working class. Efforts for an alliance of our national liberation struggle with the antifascist movement, in which the Soviet Union played a decisive role, were an integral part of the party line for expanding the resistance movement for liberation.

The Communist Party, on the basis of objective requirements of the liberation struggle, was convinced that the center of the struggle had to be on a front within the country, and guided our people to an orderly transition from lower forms of resistance to higher forms of the struggle, to armed combat against the occupation forces, and thus showed the only way leading to restoration of the nation's freedom and its social liberation.

After 15 March 1939, the Czechoslovak bourgeoisie once and for all lost its right to guide the nation and its fate. Its political representatives, lead by President Benes, exiled themselves to the West and set up a

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provisional government in London. They proposed a course of struggle which envisaged restoration of bourgeois social relations in the CSR and oriented their foreign policy to that of Western imperialist states. This was a concept of passiveness in the resistance movement, having a goal of further limiting the scope of the people's armed antifascist movement.

Comparing these different, and in many respects opposing, programs for a national liberation movement, it is not difficult to understand that the interests of the working class, headed by the CPC, objectively conformed with the interests of our people.

The working class of Czechoslovakia naturally relied first of all on help from the Soviet Union. The Soviet nation, true to the ideals of proletarian internationalism, in the period of the Great Patriotic War fought not only for the freedom of their fatherland and the independence of their people, but also for restoration of the national freedom and sovereignty of enslaved European nations.

Fascist Germany's insidious attack on the Soviet Union and its entry into the Second World War were the turning points in the struggle of the enslaved nations of Europe, including the peoples of Czechoslovakia.

The Soviet Union -- one of the first of the great states -- recognized the London Czechoslovak government in exile and the pre-war boundaries of Czechoslovakia. Soon after the attack of fascist Germany on the Soviet Union, on 5 July 1941, the USSR asked representatives of the Czechoslovak government to conclude an agreement on joint operations against a common enemy. On 18 July 1941, an agreement between the USSR and the Czechoslovak Republic was signed in which the governments of both countries committed themselves to rendering aid and mutual support of all kinds in the war against Hitler's Germany. Specific measures for the formation of a Czechoslovak military chast' on the territory of the USSR were determined by a military agreement between the High Command USSR and the CSR, signed 27 September 1941.

The Soviet government, having created all the conditions for a formation of Czechoslovak troops, proceeded from the premise in the very beginning that Czechoslovak troops in the USSR were to be an integral part of the Czechoslovak Army and this position, consolidated in signed Czech-Soviet agreements, was fully and strictly observed. The formation of a Czechoslovak military chast' was begun in Buzuluk in the beginning of 1942.

After creation of a Czechoslovak chast' capable of executing a combat and political mission based on the needs of our national liberation struggle, it was important that personnel of this chast' understand the political harm of the London policy and, under the leadership of the Communist Party of Czechoslovakia, set a course in common with our whole resistance movement.

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Czechoslovak military chast' being formed in the USSR occurred after a visit to Buzuluk, on 27 May 1942, by representatives of the CPC leadership, who were located in Moscow. Comrade Klement Gottwald's speech, which dealt with the CPC's position on the basic problems of our resistance movement and the tasks of the Czechoslovak troops in the USSR, was of fundamental significance for the correct political orientation of personnel of the chast'. It strengthened the prestige of the Communist Party and the progressive forces in it, and weakened the influence of London.

This was in the period of intensive fighting on the Volga and was reflected in the fact that the chast' commander, Ludvik Svoboda, on the genral wishes of all the servicemen, requested the Soviet Supreme Command (despite the opposition of the London bourgeois government) to send Czechoslovak soldiers to the front more quickly. Our request was approved. At the most difficult time for the Soviet Union, when many doubted it could achieve victory, Czechoslovak soldiers in the USSR -- the first foreign military formation -- participated decisively, with weapons in hand, in the common struggle against Hitler's Germany.

The combat path of the emerging Czechoslovak National Army from Buzuluk to the captial of the republic -- Prague -- was a glorious one.

The 1st Czechoslovak Separate Battalion received its baptism of fire near the village of Sokolovo as a component of the 25th Soviet Guards Division of the 3d Guards Tank Army. In stubborn fighting it carried out its assigned mission with honor. Sr Lt Otokar JAROS, commander of the 1st company, was the first foreigner to be awarded the lofty title of Hero of the Soviet Union.

The battalion became the nucleus of the 1st Czechoslovak Separate Brigade, which was formed in Novokhopersk and, as a component of the 38th Army, participated in battles for the liberation of Kiev, the capital of the Ukraine, and, as a component of the 40th Army, liberated Fastov and Belaya Tserkov'. The brigade participated in the Korsun'-Shevchenkivskiy operation and in the course of subsequent battles came out in an area west of Lutsk.

For military skill, heroism, and courage displayed in the battles for Kiev, the brigade was awarded the Order of Survivorov 2d Class, and the Order of Bogdan Khmel'nitskiy 1st Class for participation in battles for the liberation of Belaya Tserkov'. Three soldiers became bearers of the Gold Stars of Hero of the Soviet Union.

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At this time Slovak partisans were fighting no less courageously in the ranks of Belorussian and Ukrainian partisan detachments. One of them, the organizer and commander of a partisan detachment of Slovak servicemen, Yan NELEPKA, who fell in battles for the liberation of Ovruch, was awarded the title of Hero of the Soviet Union posthumously.

Battles for the liberation of Kiev were being fought on the eve of the signing of a treaty of friendship, mutual aid, and postwar cooperation between the USSR and the CSR. This treaty became the foundation of Czechoslovakia's new foreign policy orientation, aimed at permanent close cooperation, friendship, alliance, and economic collaboration with the Soviet Union, for which the CPC had been fighting for so many years. The treaty was a manifestation of the respect and sympathy of our people for the people of the Soviet Union.

At a time when Soviet forces were approaching the Carpathians after a successful spring and summer offensive in 1944, hesitant Czechs voluntarily enlisted in our chast' and together with the Slovaks, who had shifted to the side of the Soviet Union earlier, multiplied the ranks of our soldiers. On 10 April 1944, the formation of the 1st Czechoslovak Army Corps was begun, which gradually included three infantry brigades, a tank brigade, an airborne brigade, and subsequently, other chast'i. A separate Czechoslovak Air Regiment was also formed.

Resistance to the occupation in Czechoslovakia continued to grow under the leadership of the CPC, which had endured great hardships, in the form of sabotage against plants, railroads, and agriculture. Combat actions of the Czechoslovak partisans were livening up.

In 1944, under effective help from the Soviet Union, the partisan movement in Slovakia was particularly broadening. The combat operations of partisans on roads and in the rear of Hitler's armies fighting on the Soviet-German Front caused the fascists great complications. The Slovak nation answered Hitler's attempt to occupy Slovakia with decisive resistance; with guns in hand they entered the national liberation struggle against the fascist occupiers. Through a powerful national uprising the Slovak people demonstrated their resolve to stand together with the peoples fighting against fascism. The city of Banska Bystrica became the center of the Slovak national uprising. Fierce bloody battles against the German fascist divisions were fought on 29 August 1944.

The situation arising in Slovakia after the outbreak of the Slovak national uprising was very difficult. Therefore, at the end of 1944, the CPC leadership located in Moscow asked the Soviet government for help. On 2 September 1944, the Soviet government decided to prepare and conduct an operation to aid the rebels with part of the forces of the 1st Ukrainian

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Front. When the Karpatsko-Dukelsky Operation began on 8 September 1944, the 1st Czechoslovak Army Corps fought as a component of the 3rd Army of this Front. An airborne brigade and the Czechoslovak Separate Air Regiment operated deep in the rear of the enemy.

The fireceness of the prolonged and serious battles is well known. Those who fought for the freedom of the Czech and Slovak people will never forget these battles. At Dukla, Soviet and Czechoslovak soldiers sealed a true fighting friendship with their bloodshed.

It was wonderful and portentous to stand side by side with the Soviet Army on native soil after so many years. If there had been no USSR, its heroic people, or its invincible army, we could never have had those unforgettable minutes which will remain forever in the minds of those who fought in this struggle. In the toughest battles at Dukla a famous slogan was born which is dear to the hearts of all people of Czechoslovakia, 'With the Soviet Union for Eternity.' But at the time the minds of our soldiers were burning with the memories of the Munich treachery of the Western powers and the Czechoslovak bourgeoisie. At Dukla, on the newly won piece of native land for which so many had given their most precious possession -- life, we damned those who committed and surrendered our native land to the enemy into slavery without even a fight.

Liberation of Czechoslovakia began with the capture of Dukla Pass and this was an effective aid to the resistance movement against fascist occupation. No one doubted for a minute that the Soviet Army, with mighty strikes of the 1st, 2d, and 4th Ukrainian Fronts, would liberate our whole country and victoriously end the war. Troops of the 1st Czechoslovak Army Corps and the 1st Czechoslovak Air Division, together with Czech and Slovak partisans, made a worthy contribution to the liberation of our native land and complete victory over fascism.

Sokolovo, Kiev, Fastov, Belaya Tserkov', Zhashkov, Lutsk, Dukla Pass, Jaslo, Povazke, Sliesko, Ostrawa, Prague -- that was the glorious combat path traversed by Czechoslovak soldiers beginning in the spring of 1943, arm in arm with the Soviet Army.

We observe 6 October, the capture of Dukla Pass, as Czechoslovak National Army Day. On that day we marched onto native land and during the liberation of our fatherland united the two basic streams of the national liberation struggle -- soldiers of the 1st Czechoslovak Army Corps in the USSR and partisans fighting on the territory of the CSR. The joining of these two forces was the foundation of the formation of the Czechoslovak National Army. The battles at Dukla occupy a significant place in the combat traditions of our nation and its armed forces. The historical experience of our nation that only close friendship with the Soviet Union,

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with its heroic people and army, is the reliable bulwark of our national freedom and sovereignty. The Soviet Union again demonstrated with the Karpatsko-Dukelsky Operation its determination to fulfill its international obligations regarding our people, which stem from its humane goals of the liberation struggle, from its mission in the antifascist coalition, and from the reciprocal Czechoslovak-Soviet treaties. Dukla fully confirmed the accuracy of the CPC policy in the struggle against the fascist occupants -- the policy of joint struggle of Czechs and Slovaks against a common enemy, both on the land of our native country and on the territory of the USSR, in close cooperation with the Soviet Union.

II

The transfer of power into the hands of the people, victory over fascism and the subsequent democratization of public life, new principles of social relations for the Czech and Slovak people, final resolution of the German problem, and support for the Soviet Union in its foreign policy --- these were the programs of our national and democratic revolution. This was the historical situation in which was begun a new stage in the party's struggle for a national army. Changes in the realm of building our army were made in close association with our domestic and foreign policy development. The direction of this development was determined by the general political activity of the CPC and this was our party's basic contribution to resolution of the problems of building our Czechoslovak National Army.

The Party approached the task of building a new Czechoslovak army theoretically and practically well prepared. The experience of the CPSU clearly showed our party that assurance of a leading role for the Communist Party in all realms of army life must be a basic principle for building an army and the determining element of its combat capability. The party knew that the class composition of the main mass of servicemen, first of all of command personnel, must reflect the leading role of the working class in the government. It proceeded from the fact that the basis of troop education must be a victorious reading of Marxism-Leninism and that education was an integral part of all troop training. The party tried to carry out the principle of building the army on the basis of strict centralization in accordance with the requirements of modern military affairs and of equipping of the armed forces with modern equipment.

The successful resolution of these problems in the complex period of class struggles after 1945 was a victory for the policy of the CPC and its ability to creatively employ Marxist-Leninist studies and Soviet

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experience, and thereby further enrich the experience of the international communist movement.

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The Kosice Government Program was a document reflecting the first stage of our path toward building a socialist army. In analyzing its positions concerning the army, it is necessary to remember that the CPC was not oriented directly towards a socialist revolution but was trying to obtain those radical changes which could in fact be accomplished at that time and which were needed for strengthening the revolution, those which could become a reliable foundation and source for the peaceful development of our country on the path to socialism.'

In the Kosice Program there was no mention of a socialist-type army; the point was to build a new, really democratic army which from its very beginning could become a part and invincible instrument of a new national power. Building the army had to be done on a principle whereby it could gradually acquire the traits of a socialist army in the course of its development in accordance with the advancement of our society toward communism.

In the final period of our nations' liberation struggle, the party undertook the task of preventing restoration of the pre-Munich army and of laying a foundation for an army which could become the bulwark of a democratic and, subsequently, socialist developmental trend.

The party's main attention was devoted to a new political character for the Czechoslovak Army and to those factors which to a great degree influenced its formation. This applied first of all to the political principle of military building, to logical orientation toward the USSR. In other words, the party was concerned with a struggle for a new military ideology, with bringing revolutionary ideals into the conscience of servicemen and with liquidation of an army indifferent to politics.

It was necessary not only to prevent using the army for anti-national goals, but first of all to imbue the building of and the life of the army with the ideas with which our revolutionary people lived and which they had put into practice in their new national democratic government. In resolving these problems the party was true to the legacy of Lenin, who taught that a revolutionary army can become the bulwark of a revolutionary government only when its personnel thoroughly understand the great task of the revolution.

A struggle was launched for a new class and political composition of command personnel. A large group of enlightened officers joined the armed forces in 1945. This was a noteworthy event in the life of the army. The course which our party pointed out for staffing the army with command personnel provided for a sharp increase of workers and peasants in the

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officer ranks. Weeding out reactionary officers from the armed forces who were against the national democratic system improved its class structure. This action was of great importance in building the national army.

The political character of an army is manifested by the alliances it relies on and by the models it is patterned after. Comprehensive strengthening of friendship and collaboration with the Soviet liberating army and socialist armies was an integral part of the party's struggle for a new army and of its political character.

The party then tried to get a strong hold in the life of the army with political and educational work so that the army, under the leadership of the party, could be imbued with the spirit of the revolutionary national creative forces and so that the army, just as our whole country, would rely on the Soviet Union and its army.

The February victory in 1948, and the class, political, and state changes associated with it, created new conditions for further building the Czechoslovak National Army. Now the Communist Party could fully use its influence on the subsequent development of the army to see that it was built as an armed fist of the dictatorship of the proletariat, as a socialist army. After February, the party undertook the task of more quickly realizing these changes.

The need for rapid development of our army as a socialist army was dictated by the developing international situation and by changes in Czechoslovakia's international position. For Czechoslovakia, a government of the dictatorship of the proletariat, one of the most pressing problems was the task of protecting newly-won socialism from domestic and foreign enemies. This was in conformity with the natural development of all countries moving toward socialism. After February 1948, the Czechoslovak National Army was confronted with qualitatively new tasks.

A number of factors influenced the execution of these tasks from the very beginning: the formation of the European Economic Community, the reactionary NATO block, and the Korean War. The signing of the Warsaw Treaty had a great influence on the whole process of the building of our army.

The building of a socialist army in a historical period corresponding essentially to the development of socialism in our country, required the fulfillment of several basic, urgent tasks.

The orderly weeding out of command personnel was continuing. New measures, aimed at making the government and army apparatus a worker and peasant staff, were carried out. This created advantageous possibilities for strengthening the army further and for staffing it with workers and

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Educating army personnel, particularly the command staff, in the spirit of Marxism-Leninism and instructing and training the army on the basis of Soviet military science became an integral part of the general line of development of the new socialist army.

Further strengthening of the army's contacts with the people was a serious need. It was based on the principle that the socialist interests of the people were the interests of the army, especially the command staff.

A constant factor guaranteeing development of our army as a socialist army was cooperation with the Soviet Army and armies of other national democratic countries on the principles of proletarian internationalism. The Kosice Government Program, which required the new army to be built on the model of the Soviet Army and its experience, was strictly adhered to in developing the army.

The leading role of the party was gradually strengthened. Since the party assumed responsibility for the fate of our country, communists in the army began to respond to all its activities.

The problem of strengthening conscientious, strong military discipline and exact execution of commanders' orders was firmly undertaken. Strengthening military discipline, aiding commanders, and political organs, and raising the authority of commanders became the first task of communists.

The process of building a new national army proceeded not without complications.

Former Minister of National Defense CHEPICHK attributed to himself the success achieved by the party in developing the armed forces, thereby spreading his personality cult in the army. He placed himself above party organizations in the army and did not recognize the collective wisdom of military councils. He had the aspiration of hindering the party in army leadership and in exercising control over its activities, and he also tried to weaken the party's influence on the life of the armed forces.

Class principles were transgressed in the building of the army. As a result of shortcomings in the work of the then Main Political Administration, the level of party-political work in the army was seriously lowered and mistakes associated with the personality cult undermined relations of the army and the people.

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These gross blunders slowed down the realization of the party's general line and weakened the army. But they could not stop or put an end to realization of the CPC's general line.

The Central Committee of the CPC resolutely and consistently conducted a policy in 1956 for eliminating the consequences of the personality cult in the army and took measures aimed at strengthening the leading role of the party in the armed forces and at restoring Leninist principles in the building of the army. Because of this, our army achieved remarkable successes in the years that followed.

III

The problem of war and peace, which profoundly affects every man, is a basic problem of modern times. The Leninist policy of peaceful coexistence meets the approval of nations and gains more and more supporters all over the world.

The Moscow treaty partially banning testing of nuclear weapons has been signed, the treaty on banning the launching of space objects with nuclear weapons on board has been signed, and economic and cultural ties between socialist and capitalist countries are developing.

We well know that limiting tests or curtailing the production of nuclear weapons do not mean cancellation of production of this terrible weapon, nor does it prevent its being employed. To achieve the ultimate goal -- general and total disarmament -- we still have to overcome many obstacles. The world-wide struggle for peace requires great concentration of forces fighting to avert war because those forces which unleashed the second World War have not retracted their delirious plans for revenge and continue to threaten peace in Europe and throughout the world.

The development of West Germany, a dangerous business for peace, continues to disturb us. As a result of the resistance of imperialist circles, particularly West Germany, the German problem has still not been resolved. A whole complex of problems aimed at disarmament, such as creation of a nuclear-free zone in Europe, refusal of other countries to agree not to acquire nuclear weapons or to allow them on their territory, the signing of a non-aggression treaty between Warsaw Treaty countries and NATO countries, and a number of other problems have also not been resolved.

We took these serious circumstances into consideration when extending for the next 20 years the treaty of friendship, mutual aid, and postwar cooperation between Czechoslovakia and the Soviet Union, which reliably strengthens our security. It was specified that the military aspect of the treaty would have a real significance even in the future.

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The 12th Congress of the Communist Party of Czechoslovakia pointed out the necessity, based on an analysis of the international situation, of displaying high political vigilance and of strengthening the defensive capabilities of the country. In fulfilling these tasks, we are concentrating all efforts of the army on further increasing the constant combat readiness level of the troops.

Thanks to the tireless concern of the party and the government for defending the boundaries of the fatherland and to the effective help of the fraternal Soviet Army, our army has become a modern one, having reached a level of combat readiness which meets contemporary requirements for ensuring fulfillment of missions confronting our army as a component of Warsaw Treaty Forces.

The principle of a leading role for the party is gradually being realized in the development of the army. The party is constantly concerned for the development of the army, its material and technical support, its political and moral condition, and the combat training of personnel. All fundamental problems of building the army and its life are debated in the Central Committee of the CPC, the decisions of which are the main directives for the work of commanders, party-political organs, and party organizations.

Qualitative changes have occurred in the army's command staff. As early as October 1960, a staffing of command personnel was completed which by its structure was completely proportionate to the structure of our socialist society. At the present time almost 70 percent of officers and generals and 82 percent of ensigns are sons of workers and peasants. Of the total number of officers almost 75 percent are members or candidates of the party. Higher than 18 percent of officers and generals have higher educations.

Soldiers educated during the period of socialist construction in the spirit of the ideas of Marxism-Leninism, true to the nation and solid in their support of the CPC, perform their civic duty for the duration of their enlistment in the ranks of the armed forces. These young men have a good political understanding and skills in working with various equipment. They are highly cultured, have a developed sense of organization, and have more initiative than previous youths. This creates advantageous conditions for further raising the level of their communist education and for successful mastery of combat equipment and weapons.

Thanks to the rapid development of productive forces, particularly industrial forces, significant qualitative changes have occurred in equipping the army with the most modern equipment. In connection with this, the fire power and maneuverability of sovedinieniya of ground forces, air forces, and air defense forces have increased.

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In the field of organizing and distributing troops, steps have been taken which ensure a high and constant combat readiness of the army, equal to the tasks of Warsaw Treaty Forces. In our army there are eight technical companies, or podrazdeleniya equal to them, in one motorized rifle company. In accordance with this, the number of technical personnel has significantly increased. At the present time, 32 percent of command personnel are engineers and technicians, and the number is steadily increasing.

Our army is developing in a world socialist system and is constantly strengthening and growing cooperation with brother armies of Warsaw Treaty Forces. The training and education of troops is conducted according to new regulations, reflecting those changes which have occurred in the life of our society and in the field of military affairs, which generalize the position experience of the Soviet Army and other fraternal socialist armies. Training according to the new regulations promotes the unification of our common efforts in increasing the might of the Warsaw Treaty forces, which stand on guard of communism and peace.

At the present time, maintenance of high combat readiness, improvement of armament and military equipment, and strengthening of the solidarity of the Warsaw Treaty Forces are the main tasks posed by the 12th Congress of the CPC. The development of Leninist principles for military construction are manifested in this.

The task of a communist education of army personnel, of forming a scientific Marxist outlook, of education of soldiers in the spirit of communist morality, of a systematic struggle against remnants of the past and against the influence of bourgeois ideology, particularly against pacifist attitudes, are today moving more and more into the foreground. Reinforcing communist education has become one of the main fields of work for commanders, party-political organs, and party organizations in strengthening the leading role of the party.

A basic objective of party-political work is strengthening and raising the combat readiness of troops, staffs, and institutions, and educating army personnel in the spirit of Marxism-Leninism, socialist patriotism, and proletarian internationalism.

In order to raise the quality of ideological-educational work it is necessary to improve its organization and leadership. To do this it is necessary to make a careful account of the situation, know the interests, attitudes, and opinions of the men well, and coordinate educational work with the tasks and life of the troops and the whole society. Judicious selection and training of cadres has a decisive influence on the effective development of ideological-educational work. Therefore, problems of educating the educators themselves are now in the center of attention.

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In July of last year, the Central Committee of the CPC, based on tasks and resolutions of the 12th Congress of the CPC and changes in Party Regulations, approved new instructions for party-political organizations in the army. We are conducting all work in carrying out these instructions in accordance with the tasks with which the troops are confronted and which they must resolve at the present time.

Improvement of troop training and skillful mastery of the most modern combat equipment are serious tasks for troops and staffs. Rapid development of combat equipment and weapons is characteristic for our army. The complexity of this equipment is progressing comparably.

In executing the specified task we pay attention to qualitative mastery of equipment by the masses of servicemen. Keeping in step with rapid technical development and increasing theoretical knowledge are basic means of achieving success. We want all servicemen to skillfully master modern equipment, take care of it, and maintain it in constant combat readiness.

Skilled training of specialists is required for mastering complex modern equipment. On the other hand, conditions of modern combat require interchangeability within a crew or team.

In raising the level of combat readiness of troops considerable importance is given to field training. Our efforts are aimed at training and educating troops in situations as close as possible to actual combat conditions. This permits training bold and courageous men who are fully able to use the capabilities of the armament of the troops. It acquaints servicemen with the effects of enemy weapons and teaches them to find effective protection against them.

We direct the special attention of commanders, party-political organs, and party organizations to tactical training. Recently, due to improvement of our training and material base and increased attention to fire training, especially of tanks, the results of firing have improved. Executing several complex exercises, some regiments achieved high results. The experience of winter and summer training periods once again confirmed the accuracy of the position that where proper attention to field training is given, better results in strengthening the combat readiness of troops is achieved.

Improving the leadership of troops and organizational work is of great importance for further raising combat readiness. We are confronted with serious problems in building our armed forces in accordance with our economic and manpower capabilities within the framework of the common development of Warsaw Treaty forces.

Problems of strengthening one-man command and the personal participation of commanders, chiefs, and political workers in the education of subordinate cadres are fundamental in the field of troop control.

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Recently we have done a great deal of work in achieving unity of ideological and organizational work. At the same time a basic requirement has been observed: it is impossible to mobilize the masses of servicemen to execute serious missions without persuading them, and, on the other hand, each persuasion must mobilize servicemen to fulfillment of practical matters.

Further improvement of troop leadership and increasing the unity of ideological and organizational work, will continue to be basic problems of raising the combat readiness of troops.

Achieving a high level of military discipline and organization of troop life is no less an important task. We want first of all to achieve a situation wherein the qualitative changes which have taken place in the development of the army and in the life of the troops, and which demand a high level of military discipline as never before, are taken into consideration in the struggle for a high level of military discipline and organization of troop life.

At the present time military discipline is the discipline of masses of servicemen, in the hands of whom are modern weapons and qualitatively new combat equipment. This significantly broadens the responsibilities of servicemen and the significance and substance of military discipline itself are becoming more extensive and important for fulfilling the tasks confronting the armed forces. The more complex equipment and its operation become and the greater the number of maintenance personnel needed, the higher and stronger military discipline must be. Punctuality also plays an important role in the period of rapid development of nuclear weapons.

Therefore, we must obtain the maximum responsibility and precision of fulfillment of the requirements of orders and regulations, constantly increase exactingness toward personnel, and at the same time show tireless concern for servicemen, improve their education and develop and appreciate the influence of military surroundings.

The center of education and training in our army is the company, battery, and squadron. Questions concerning the quality of execution of the combat and political training plan are resolved there; servicemen are educated there in the spirit of the requirements of the military oath and regulations; their combat mastery takes shape there; and it is there that their character and discipline are tempered. We are trying to improve significantly the quality of training of master sergeants and

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company and platoon commanders. We want to better train these educators for educating their subordinates. They must be an example to their subordinates, both in discipline and in carrying out all combat training problems. We are intensively working with them directly in companies and battalions, and we are effectively aiding them in fulfilling their assigned tasks. They are our youngest commanders and do not have much experience yet. We have many possibilities for fulfilling this task.

In connection with the 20th anniversary of the Slovak national uprising and the battles at Dukla, and also the 20th anniversary of the liberation of Czechoslovakia by the Soviet Army, there has been a sharp increase of activity and initiative among servicemen of our armed forces, which is reflected in further development of socialist competition. This makes it possible for us to mobilize new forces to resolve basic problems of further increasing the level of combat and political training and to conduct an active struggle against several displays of indifference in socialist competition.

Servicemen are making every effort to observe this noteworthy date with high showings in combat and political training. Commanders and chiefs of all levels are called upon to encourage valuable initiative in this and to correctly organize work in promoting better fulfillment of the training year's tasks.

These are some of the main tasks confronting us at the present time. It must be said that in fulfilling them we have achieved significant successes. In honor of Czechoslovak National Army Day and on the 19th anniversary of the liberation of Czechoslovakia by the Soviet Army, several chastí were awarded orders for consistent, good, and excellent results in combat and political training. The government of our socialist republic highly values their contribution in ensuring the defensive capability of our country. We are sure that by the example of these chastí and sovedinieniya other chastí and sovedinieniya will fight for high results in combat and political training and thereby enhance the high combat readiness of our armed forces.

IV

At the very heart of the new traditions of our National Army lie its firm contact with the peoples of our country, with their vital interests. Here is the source of strength of our army.

Even during the formation of Czechoslovak military chastí and sovedinieniya in the USSR, the leadership of the CPC, which was located in Moscow, demanded (and its demands were supported by all servicemen)

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that Czechoslovak soldiers actively fight shoulder to shoulder with the Soviet Army against the common enemy and thereby help liberate our country. From the very beginning the CPC demanded that our chasti in the USSR be built in accordance with the highest interests of our people. It was demanded that the Czechoslovak soldiers conduct not only an active struggle for the liberation of the country, but also prevent restoration of a bourgeois government associated with the Western allies in Czechoslovakia. The concept of a national army promoted by the Communist Party demanded the creation of an army which would not be a weapon of the bourgeoisie against the revolutionary masses, but which would consist of active fighters for the interests of the people, for liberation, and for realization of basic, revolutionary reorganizations in the postwar period.

A clear demonstration of the victory of this policy was not only the joint combat operations of Czechoslovak military chasti in the USSR with the Soviet Army, but also the entire postwar history of the Czechoslovak National Army. It was precisely the soldiers of the 1st Czechoslovak Army Corps in the USSR who helped the Slovak and Czech people defeat the traitors and collaborators, organize local national committees -- the new organs of national power, restore the destroyed cities, villages, and plants, and eliminate the consequences of the war. From its very beginning the new national army became an active participant in the political and economic life of the national democratic republic and helped strengthen the unity of Czechs and Slovaks.

New instructions of the Central Committee of the CPC concerning the work of party-political organs and party organizations demand further strengthening of the Army and the people and an increase of party influence on and control of all activity of the armed forces. The essence of these requirements consists of making unity of the army and the people more popular, of having the army reflect all the changes occurring in our society, and of improving the civil defense training and education of the population to responsibility for defense of the fatherland.

The army's tasks in this area arise out of the necessity of understanding the whole complex of problems determined by the 12th Congress of the CPC regarding the defense of our country and the training of the whole nation to defend socialist achievements.

The Communist Party of Czechoslovakia and its Central Committee are directing their efforts to instilling a correct understanding of the problems of defense of the country and the party's military policy in broad masses of the people. We want to use to an even greater degree various interesting methods to bring the combat traditions of the army closer to the people, to acquaint our youths with the life and

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training of our servicemen, to conduct joint activities between our army and civil defense forces, and to increase their physical hardiness.

We are intensifying unity of the army and the people by activities and participation, particularly of command personnel, in public life, especially in defense work. Chasti and podrazdeleniya organize joint talks with workers, become acquainted with the work of our people and the sights of our cities and regions, and actively participate in resolving domestic problems. We extensively use exercises and drills of the troops for conducting mass political work among the civilian population.

The vital interests of our people require that its army be strong and fully prepared to defend the interests of socialism. Therefore, outstanding fulfillment of the tasks of combat and political training, exercises, and education, are tasks of all servicemen. Our people make these basic requirements on its army so they can peacefully build socialism in our country.

A primary source of our strength is the powerful world socialist system, which effects the course of world history more and more deeply, and the strong and indissoluble unity of countries of the socialist camp.

We always direct our activities toward strengthening the unity and economic and military might of socialist cooperation. In the area of defending the socialist camp we execute tasks ensuing from our participation in the Warsaw Treaty organization. We will continue to unswervingly strengthen fraternal cooperation with the Soviet Army and other socialist armies.

Our Czechoslovak army is an integral part of the Warsaw Treaty Forces and within the framework of the Czechoslovak-Soviet and Warsaw Treaties it performs an exceptionally important and responsible task in defending the western boundaries of the socialist camp in the first operational-strategical echelon against the main strike forces of NATO in Europe. No socialist government intends to attack anyone, but at the same time we want the enemy to have no doubts of our readiness to defend socialism and peace.

We agree with the words of Mar SU R. Ya. MALINOVSKI that "the best method of defense is to warn the enemy of our strength and preparedness to rout him at the first attempt to commit an act of aggression."

Considering that the aggressors are nurturing plans for sudden attack, we demand from our troops constant high combat readiness in the system of armies of the Warsaw Treaty, which in its activities is guided by the principle of one for all and all for one.

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The effective help of the Soviet Union is of invaluable significance for the building of our army. Both during the Second World War and after 1945, the Soviet Union gave us and our army comradely help. Immediately after liberation we received the necessary arms and equipment. Extremely important for the building of our National Army were the hundreds of Soviet military specialists who were sent to us and who passed on a wealth of experience, the help of Soviet military educational institutions in training our military cadres, and the large materiel support sent to us. Thanks to the Soviet Union's comprehensive aid, our army became fit for combat in a short time.

Even today we can rely on aid from the Soviet Union not only for the development of prospects for building our army so that it fully meets the requirements of modern military affairs, but also for technical aid. Without Soviet support our army could not have been equipped with the most modern combat equipment, nor could it have fully provided the training and education of troops with respect to the requirements of contemporary warfare.

The Soviet Union, having achieved superiority in production of the latest means of combat, such as multimegaton nuclear bombs, global rockets, means of antimissile defense, and atomic submarines, has thereby contributed to the defense of every government of the socialist camp.

The Soviet Army was and continues to be the best example for us of how to achieve victory over the enemy. The slogan "The Soviet Army -- Our Model," was born in the crucible of battles. Even at the present time consistent use of the experience of the Soviet Army is of paramount importance for the fulfillment of the tasks of combat and political training and for the further growth of the forces and combat readiness of our Army.

There is no sector of economic, political and cultural life in Czechoslovakia today which has not profited by Soviet aid and where cooperation with the Soviet Union has not appeared. The same relations exist between our brother armies.

In all of our activities we proceed from the principles of Soviet military doctrine. We creatively use the wealth of experience of the Soviet Army since we are convinced that it is one of the basic ways of further raising the combat readiness of our troops, and we are doing everything to apply this experience even more widely in the training and education of the Czechoslovak National Army.

In April of 1963, a Czechoslovak military delegation visited the Soviet Union. Meetings with Soviet soldiers once again confirmed the solidarity of Czechoslovak-Soviet friendship. We saw the feelings of deep friendship and socialist internationalism the Soviet soldiers have for brother armies of Warsaw Treaty Forces. This was shown not only in the course of friendly meetings, but also during combat training exercises.

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This was fully demonstrated during the period of aggravation of the international situation, during the events in Hungary, the Berlin crisis, and during the tense situation in the Caribbean Sea, when our army was in full combat readiness and was ready to defend socialism and peace together with the Soviet Army and the other socialist armies.

Joint exercises of several armies of Warsaw Treaty Forces in recent years demonstrated the excellent combat capabilities of fraternal socialist armies, the high level of combat readiness, the military know-how of commanders and staffs, and the mutual cooperation of separate armies defending the inviolability of the borders of our socialist alliance. This is a reliable bulwark for the constructive labor of the peoples of our countries, occupied with the building of socialism and communism.

On the occasion of the 20th anniversary of the Czechoslovak National Army, we assure our true comrades in arms, the soldiers of the Soviet Army, that together with them and the soldiers of the other armies of the Warsaw Treaty we vigilantly and steadfastly stand on guard of peace and socialism.

by Col. V. MOCHALOV

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A definition of the character of a future war, based on theoretical recognition of the developmental tendencies of social conditions and military equipment, has always had great significance for any state. Currently this definition has acquired particular acuity since it affects the interest of all mankind and, primarily, the international working class -- the hegemony of the universal struggle against imperialism.

Resting on scientific Marxist-Leninist methodology, Soviet military science has correctly determined the features of modern war. A future war, if the imperialist unleash it will be a decisive armed conflict of two opposing systems. Because of the character of the means employed in it, it must become a nuclear-rocket war in which the main means of destruction will be nuclear weapons and the basic means of delivering them to targets will be strategic and operational-tactical rockets. We have no doubts of its outcome: capitalism will be buried, but at what a price!

Soviet military science does not even exclude the possibility of conducting local wars which are carried out in a defined area and limited by the territory and the means employed. These wars, if they are conducted against people struggling for their freedom and independence, are considered by us to be aggressive and unjust. At the same time, Soviet military science considers that such wars may escalate into a world nuclear war, particularly in those conditions where the imperialist employ "tactical" atomic weapons. In this event they will provoke a crushing, answering nuclear-rocket strike.

The correct evaluation of the character of a future war has enabled the determination of the role and place of each branch of the armed forces in it. On the basis of a calculation of the decisive forces of peaceful development the party has reached the conclusion that the prevention of war is possible. This conclusion was not made out of fear of new weapons as the capitalist dogmatists maintain, but out of the necessity of saving mankind from destruction and of preserving the material and cultural values accumulated over the centuries.

The scientific definition of the character of modern war has permitted the Soviet Union, with its powerful economic base, to establish armed forces capable of preventing an aggressor from attacking countries of the socialist camp and other peace-loving states.

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In general, Soviet military science, comprehensively evaluating the character of war, proceeds from its political, class essence which permits correct determination of its types and their character and, therefore, the attitude toward it.

Bourgeois theoreticians define war from one side only examining, its external features, the military-technical side, and in every way suppress its class essence. They do all this to hide from the people the real goals of war which by virtue of the nature of imperialism are of a reactionary character.

At the present time American military theoreticians officially divide war into three types: cold, limited, and general. These definitions are already carried in US Armed Forces regulations.

Cold War. The term cold war came to be used in the American press after the well-known speech of the British Prime Minister Churchill in Fulton in 1946. In it he called for the creation of an Anglo-American military alliance for the struggle against "Eastern Communism." The primary essence of this war was reduced to conducting policies which would create tension in international relations particularly between the US and the USSR. This policy included blackmail and the threat of force against the socialist countries, of subversive activity of imperialist spies and an economic blockade, anti-Communist propaganda, the kindling of war hysteria and other consequences resulting in intensification of the arms race and war preparations. Many plans have come into being during the course of carrying out the cold war such as the "Truman doctrine," the "Marshall Plan," the creation of the NATO, CENTO, SEATO military blocs, completion of the division of Germany, and others.

Now the US militarists are not quite satisfied to comply with such a policy. They have decided to lend it a more bellicose character and to write the cold war, according to the English journal Survival, into the US Army field regulations for "Conducting Combat Operations" (FM 100-5). (Survival, July-August, 1962, p 174) Thus, the cold war has become part of the armament of not only the State Department but also the US Ministry of Defense.

In the regulations it says: Despite the fact that the basic feature of the cold war is the lack of open armed conflict between armed forces of enemy states, a clear or absolute border-line between a cold and limited war (and this war is considered to be "hot" -- V. M.) does not exist. Therefore, to carry out cold war operations, which by their content and goals are much similar to military operations, armed forces may also be employed." (Survival, July-August, 1962, p 175) They can be employed "to support the government of a friendly state which is in a difficult position in order to stabilize instability created there, to maintain or establish order, or to defend people and property."

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There is no doubt that the American policy of "ending the people" covers up the direct interference in the affairs of another state with the object of suppressing the national liberation movement there and establishing a system favored by the American imperialists. In essence, the US Armed Forces during the period of the cold war are charged not only with political functions but with the carrying out of military operations also. And these missions are primarily assigned to the ground troops which are located in coastal theaters of military operations. Other branches of the Armed Forces may also be assigned for their support. And this cannot but lead to an increase in military operations. Thus, the theory of the cold war also leads to the carrying out of military operations, although at first not on a large scale. The export of counterrevolution is considered a new addition to the cold war theory.

Obviously, American military theoreticians make no distinction between the cold war, as a policy of strained relations, and general war, the main form of which is armed conflict. Hence the employment of armed forces is not armed conflict. But this is just being choosy, an imprecise mixture of various views on social phenomena. Everyone knows that war is a means of carrying out of the policies of defined classes. War is the continuation of politics by forceful means; we emphasize that it is a continuation, not politics itself. Although V. I. Lenin also used the expression "war is politics through and through," it is impossible to draw the conclusion that he is placing an equal sign between war and politics. With this expression Lenin defined the political essence of war, its class character, so that it would be possible to elaborate a defined attitude toward it and, moreover, the strategy and tactics of struggle against imperialist politics.

American Worshippers of the cold war considered that any policy must be effected only by military means and any international question decided only by the force of weapons. There is, of course, nothing new in this. Corroboration of the "brink of war" policy, which the American imperialists have attempted so strongly to thrust upon the people, manifests itself in the except from the regulations referred to earlier. Argument by Western ideologists for peace are thoroughly hypocritical and deceitful.

Limited War. The theory of conducting limited wars has been a subject of particular interest to the imperialists. In the West it has already become a sign of bad form if a political figure, speaking of world problems, does not say something about methods for war on a limited scale, attempting through this to present himself as not an opponent of armed violence. And the generals of the Pentagon, the military servants of Goldwater, regard this theory as if they were children with a new toy and try to present it as the last word in military strategic thought.

Meanwhile, the idea of limited military war is becoming new. The well-known German military theoretician Clausewitz wrote of this in his own time. He maintained that "when defeat of the enemy is not the object of the war," then its goal "consists of occupying part of the hostile territory."

The English historian Corbet (1854-1922) also spoke of this. Following Clausewitz he repeated that in a limited war the goal of complete defeat of the enemy armed forces is not pursued; on the other hand, it can be limited to seizure of a defined territory and defeat of the Navy.

Finally, the history of American and English imperialism supports the fact that seizure and plundering of a settlement has taken place during small and limited wars.

As is known, the theory of conducting limited wars has existed during the entire epoch of imperialism.

Now Western military ideology is modifying this theory, attempting to adjust it to modern conditions. This idea was not arrived at immediately. Not from good intentions nor because of a good life did they decide on this step. Undoubtedly they would prefer not to trouble themselves by searching for different theories. They would rather conduct wars on any scale and in any areas according to laws of the jungle and without any limitation, only to achieve their reactionary goals. But to the sorrow of the imperialists, the world situation is so complex that they can no longer set fire to the world with impunity whenever and wherever it suits them. World forces, headed by the Soviet Union, have become so powerful that they can in good time come to blows with the torch bearers of war and put out the fire in the very beginning as was done, for example, in 1956 during the war against Egypt and in the crisis in the Caribbean Sea area brought about by the actions of the aggressive circles of the US at the end of 1962. And not only put out the fire, but deliver a crushing blow upon the aggressor in the event that it is necessary.

Until 1949 American political and military figures did not suspect that atomic superiority over the Soviet Union would be deprived them. In that year the USSR became the possessor of nuclear weapons. Soon afterwards the Pentagon, not satisfied with plans for conducting total war, began to elaborate a theory of limited wars. In 1951 this planning was assigned to the California Institute of Technology. The plan provided for the broad study of the operations of ground troops and tactical aviation in limited wars in addition to possibilities for employing nuclear weapons in them. (M. Halperin. Limited War in the Nuclear Age, New York, 1963, p 59)

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Having lost superiority in atomic weapons, the Americans did not wish to lose hope of restoring it. They seized upon the idea of creating a hydrogen bomb a thousand times more powerful than the atomic bomb. But while they were entertaining the idea, Soviet scientists mastered the secret of the hydrogen bomb before the Americans. In 1953 the Soviet Union already had a multimegaton thermonuclear bomb for dampening the hot tempers of the chiefs of Washington and Wall Street.

In 1957 when the first Soviet sputnik in the world was raised into space the American imperialists experienced their first shock. This launch bore witness to the great achievements of our science and to the existence in the USSR of powerful intercontinental ballistic rockets.

In this connection the world strategic situation changed radically in favor of the USSR. It was necessary for the statesmen in Washington to swallow the bitter pill and face the fact that an attempt to deliver a blow against the Soviet Union would meet such a rebuff for which the US, and that web of bases which was spun in the vicinity of the USSR, would have to pay. These bases in the event of war would be destroyed simultaneously with strikes against North America. Consequently, in addition to losing its atomic monopoly, the US was deprived of its invulnerability; the ocean expanses had ceased to serve as a shelter for the continent.

The doctrine of total war also became unsteady. The Pentagon was no better off than at the start. The White House had devised a new theory to replace this doctrine -- the theory of "nuclear stalemate." In essence, it says that the US and the Soviet Union have such means of armed struggle which can mutually destroy one another. To begin a war in these conditions is tantamount to suicide and the possibility of victory would be doubtful. War would be so devastating that the risk connected with it cannot be justified.

The US militarists wanted to mask their weakness with the theory of "nuclear stalemate" and cover up the fact that they had lost their superiority, that they were losing in the great historical debate, a debate over which system will exist on our planet -- communism or capitalism.

With the passage of time this theory also turned out to be without foundation. American political and military figures have begun to become convinced that it cannot ensure attainment of desired goals. Thus, together with the propagandizing of this theory a feverish search for new doctrines began which would preserve war as an instrument of their domestic and foreign policies. And this is to be expected. Imperialism cannot spread without war. War is one of its vital sources. To preserve war means to heat up the international situation, to incite conflicts, and in addition to urge on the arms race. But how do you

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raise the "prestige" of the United States. Even now the inhabitants of Japan remember the destructive radiation, the crime of the American militarists. This is known to the entire world. Therefore it is necessary to disguise war in order that its brutal grin not be so strange even in the nuclear age. It is necessary to soften and to limit its scope. And so the Pentagon began to give birth to the theory of limited wars.

M. Taylor, chairman of the Joint Chiefs of Staff, in his book "Uncertain Trumpet" (M. Taylor, Nenadezhnaya strategiya, Voenizdat, 1961, p 115), writes that it is necessary to increase US capability to conduct limited war and that it is necessary to develop special forces for conducting it as an active element of military strategy.

The theory of limited wars has officially become a component part of a new strategy, the so-called strategy of "flexible reaction" which was accepted in 1961 together with the bankrupt "strategy of retaliation," which provided mainly for conducting a world war. The goal of the new strategy was not only to conduct a world nuclear-rocket war but also for limited wars with and without the use of nuclear weapons. Including the theory of limited wars in military strategy supposedly lends it a particular flexibility which permits the armed forces to operate in any conflict whatever its character -- world or local.

How do the transoceanic ideologists currently interpret limited war?

Limited wars are understood to be armed conflicts and engagements which should be limited by political and military goals and territories and by the employment of combat forces and means. According to the field regulation "Conducting Combat Operations" wars regarded as such are local wars, wars which employ only conventional means, and limited nuclear war. (Survival, July-August, 1962)

A local war is considered to be an armed conflict limited in territory; that is a war which is conducted in some sort of limited area on a territory of one or two states, mainly those which are far from the US. The war in Korea may be cited as an example.

A local war is limited not only by territory but by the forces and means employed. Therefore, it is a variety of limited war.

The American imperialists conduct local wars primarily against countries which want to break loose from the colonial yoke and start on the path to national independence. In Western ideology, these wars are considered to be a means of struggle against the collapse of the colonial system and in general for struggling with any anti-imperialistic and revolutionary movement. R. Osgood, one of the American theoreticians on limited war, spoke freely of this: "As a greater number of small

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powers become filled up with aspirations and rather than to act in accordance with their own desires, the United States, must, as far as possible, not mind intervening in a war which has arisen without the direct participation of the Communist bloc." (R. Osgood. Limited War. Voenizdat, 1960, p 313)

Until now local wars have been conducted without employing nuclear weapons. Therefore they can be regarded as a second type of limited war.

A war in which conventional means are employed can be conducted on a wider scale than a local war. Note that conducting conventional war against the USSR is not being considered. When speaking of war against the Soviet Union almost all Western theoreticians and state figures speak of the necessity of employing means of massive destruction against it.

The employment of these means is also not excluded in local wars when the US does not intend to agree to an inevitable defeat.

A conventional war may also break out between individual imperialist countries, but nuclear weapons may be put into action during the course of it particularly in modern conditions when in addition to the US, England and France possess such weapons. Who will guarantee that in a war between themselves the militarists of these countries will not employ nuclear bombs? Between them they have not even concluded an agreement on banning nuclear weapons.

Limited Nuclear War. According to American theoreticians it may be limited by political goals, territories, military objectives, and by combat forces and means.

Let us first examine a war limited by political goals.

The military ideologists of imperialism have long renounced the opinion that the goals of war do not depend on political aspirations. More and more they are acknowledging the fact that the politics of a state also determine military goals. Thus proponents of limited war consider that limitation of political goals is quite possible. But the trouble with Western theoreticians is that they can not say anything definite about this question. They write that the goals of war should be "modest," "attractive," "moderate," and should not, for example, pursue the goal of liquidating the existing regime. R. Osgood suggest that concrete political goals, for a number of which the United States must be ready to conduct limited war, not involve radical changes of the status quo, that none of the sides places before itself such goals which threaten the status quo and which would warrant increasing the scale of military operations or give a push to the great risk of unleashing total war." (R. Osgood. Limited War. Voenizdat, 1960, pp 313-314)

At the same time such discussions should be prohibited.
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 What "modest" goals can imperialism advance? When have they suggested "attractive" goals? History does not know of such examples. Who will prove, that imperialists in the event of victory over a country would permit the people the right to decide for themselves the question of state structure? Historical experience shows that capitalists when seizing a state have never considered the interest of the people and have always established their own order in spite of their wishes. Always it has been only enslavement that has been borne upon the bayonets of the imperialist armies. This is sometimes indirectly recognized by the bourgeois theoreticians themselves. In the French journal Force Aerien Francasis (May 1957) it was pointed out that during the war against Egypt not only was the goal of seizing the Suez Canal pursued, but it was also "hoped to see the fall of the Nasser regime." The American Professor Henry Roberts in his book "Russia and America" writes: "The United States must stop the establishment of Soviet Communism in the entire world even at the price of general war."

All this speaks for the fact that talk of limiting political goals is simply a smoke screen masking the predatory plans of the imperialists.

Besides the limiting of political goals, great significance must be given to limiting the territory of military operations.

Limitation by territory must manifest itself in the establishment of defined borders of military operations. R. Osgood maintains that "if military operations are not precisely limited by defined geographic borders they will overflow and be such a serious threat to the security of America and Russia that both powers will consider it necessary to deliver a blow against the population centers of the enemy." (R. Osgood, Limited War, p 321) With this object it has been suggested that objectives be established far from the front lines in order to limit nuclear blows to a defined zone of operations.

Limitation by territory is considered possible under two conditions: First, if the opposing side is prepared to accept the full destruction of all its material of value in the zone of combat operations and, therefore, not deliver strikes against objectives located outside this zone, even those having important strategic significance; second, if the zone of combat operations falls within a country which does not possess nuclear weapons because its government has not agreed to spread the application of nuclear weapons to its own territory.

It has been suggested that it is easiest of all to localize a war in those areas where there are no defined physical borders between states, for example on islands and, in part, on peninsulas.

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...in essence, advanced no practical suggestions for limiting the territory of military operations. While speaking of the necessity of resolving this question, they do not connect it with limitation of political goals upon which depends the scope of military operations and since the US imperialists are striving for world domination there are no grounds for a discussion about limiting military operations by territory.

When conducting limited nuclear war not only is limitation of the zones of military operations required, but also of the assault objectives. Therefore, Western theoreticians would like to spell out beforehand all objectives which they do not intend to destroy.

In order to lend a pseudo-scientific character to this matter several of them suggest dividing all objectives into tactical or strategic. To the former would belong groups of armed forces, rocket, aviation and naval bases, transportation and warehouse installations serving the field armies. To the second would belong cities, industrial enterprises, central supply warehouses, and so forth. It is considered possible to destroy the first by nuclear weapons, the second to leave in peace (even those which are found within the limited war zone.)

Now, theoreticians suggest dividing all targets into two types: civilian and military. In particular, the US Minister of Defense McNamara in 1962 suggested that in the event of war nuclear weapons be delivered only upon military objectives wherever they might be. Thus his "limited war" is the same as a world war, but excluding civilian objectives. This suggestion received the designation "counterforce strategy," that is forces against forces. But it is the deep conviction of the Pentagon leaders that such a strategy enables the scale of destruction in the event of war between the USSR and the US to be limited. This strategy has already been criticized in the pages of our journal. (Voyennaya Mysl, No 3, 1963)

Some theoreticians consider that it is necessary to prohibit in general the atomic bombardment of all cities, including ports, those exceeding defined limits, no matter what objectives they have, being the only exception to this position. Among the numbered exceptions should be cities located directly in the zone of combat operations which were not declared open in advance, or those from which some sort of offensive action had already been taken as, for example rocket launches, and, finally, cities which are near airfields being employed for operations. In these cases airfields must be subject to nuclear bombardment.

In addition, there is a recognized possibility of prohibiting atomic bombardment of all cities which exceed defined limits but in which there are no military tactical objectives. This supposedly would permit combining the idea of differentiating between strategic and tactical objectives with the general idea of prohibiting atomic strikes against cities with

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large population concentrations. This is also tied to the fact that a limited war with the employment of nuclear weapons will become more protracted than a general war and, therefore its outcome will be decided by ground troop offenses and not by the bombing of strategic objectives.

Limiting combat forces and means. When discussing this problem the subject of concern is primarily the limiting of nuclear weapons. Of course, none of the imperialist ideologists mentioned prohibiting them altogether. They would rather just limit the employment of so-called tactical nuclear weapons which they regard as atomic charges with a power of 1,000 to 100,000 tons of TNT. And no greater. The non-employment of strategic nuclear weapons is considered possible.

This suggestion is obviously intended to deceive the people. What limitation can this give if this weapon is intended for use on an unlimited scale? Tens of atomic bombs can replace one hydrogen bomb and the degree of its devastation and radio active fallout. An atomic bomb, equivalent to 100,000 tons of TNT, can cause great devastation. It is known that the Japanese cities of Hiroshima and Nagasaki were destroyed by bombs with a power of only 20,000 tons of TNT. Therefore, it becomes more difficult to draw a line between tactical and strategic weapons since any bomb of medium power can be used to execute strategic missions.

Why do the American theoreticians want to legalize the employment of nuclear weapons in limited war? They consider that the correlation of forces in any armed conflict employing conventional means will not be in their favor. Without nuclear weapons they, undoubtedly, will suffer a fiasco. The US Minister of Defense McNamara, speaking to the New York Economic Club on 18 November 1963 said: "No one says that the NATO ground forces in Europe are sufficient to turn back a massive surprise nuclear attack without employing nuclear weapons."

Such an argument is pure demagoguery. It is intended to persuade world public opinion that socialist countries are maintaining great armed forces and are preparing to deliver a nuclear blow against the "free world."

In the bourgeois press one notes that tactical nuclear weapons should be employed to destroy the manpower and combat equipment, artillery and rocket firing positions, airfields, and to destroy permanent firing points, etc. In essence, there will not remain one area within the zone of combat operations against which means of mass destruction will not be employed. Even those objectives, against which the delivery of nuclear blows is recommended, call into question the assertion that some sort of limitation can be achieved in nuclear war.

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As far as employing conventional types of armed forces in a limited nuclear war is concerned, the US will subscribe only to that limited war which is conducted according to the rules of the American militarists. The main goal, for which this is established, is to guard the territory of the US against retaliation. M. Taylor, chairman of the Joints Chiefs of Staff, said: "A limited war may be any armed conflict in which the existence of America is not at stake."

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The propagandizing of various types of limitation pursues one goal -- camouflaging danger of a future war and at the same time to dull the alertness of the people. Fighting for the limitation of armed conflict, the imperialist ideologists are primarily concerned with their own interests. This is cynically demonstrated by B. Brodie, one of the proponents of such wars. In his book he wrote: "We will always have an extremely critical regard for all suggestions for limitation and will accept only those that suit us." (Bernard Brodie. Strategy in the Missile Age. Voenizdat, 1961, p 332)

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In other words, the militarists in the Pentagon support that limited war which would ensure the liquidation of the world's socialist system and at the same time would not affect the territory of their own country, that is a war far from the US, and in which the Wall Street bosses would ring out their profits and stuff their safes with gold washed with the blood of the people. There is no need to point out that such calculations are doomed to failure. In the event that the imperialists unleash a war, even against one of the socialist countries, the war will also engulf American territory in flames. The imperialist creditors of the US will have to answer for it. And they will receive the appropriate punishment!

How does Soviet military science regard the limitation of military operations? Is limitation possible in modern conditions?

An indication that the limitation of war is currently possible is the suggestion of the Soviet Government on prohibiting nuclear weapons. However, up to now the imperialist countries refuse to accept this suggestion. This refusal unmasks the ideologists of the West and subjects all their reasons for limiting military operations to doubt.

If one turns to the history of the Soviet Union's armed struggle for its independence then one finds many examples substantiating the fact that our command has always been against thoughtless annihilation of the enemy. When the German-Facist troops were encircled on the Volga, at Korsun'-Shevchenkivskiy, and at Budapest the Soviet command offered

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the enemy imprisonment. The enemy declined this offer after which, naturally, the liquidation of the encircled groups was begun. If the ultimatum had been accepted by the German-Fascist command then its encircled troops would not have suffered such great losses.

The basic mission of the Soviet armed forces is to defend the socialist system against the encroachment of reactionary forces, to serve humanism, and they will strive in the future to limit the number of thoughtless sacrifices in war. At the same time they will carry out a decisive struggle against those who are attempting to disrupt the peaceful labor of the builders of Communism. And if war is begun then it must be conducted decisively, actively, to full victory over the imperialists. V. I. LENIN said of this: "Conduct war properly or not at all." (Sochineniye, Volume 27, p 24)

A general war, as pointed out in the US Army regulations, is "the armed conflict in which the warring states or coalitions, possessing nuclear weapons, use all available means. Such a war is characterized by the absence of any sort of limitation, including limitation in the employment of nuclear weapons."

Judging by this definition, a general war is a war which is unlimited in its scope and in the application of combat forces and means; that is, it will be a global war enveloping the entire globe, the entire world. And above all this war will be a war of two coalitions -- the imperialist and socialist military coalitions, a war between the two strongest groups of states, between the two opposing social systems which exist at the present time. The ruling reactionary circles of the US do not hide the fact that such a war is being prepared by them against the Soviet Union, which is the head of the socialist camp. Therefore even its goal acquires a more decisive character than existed in past world wars. The goal of a modern world war is considered to be not only defeat of the enemy armed forces and the seizure of its territory but also a change in the existing political and state regimes and the social structure of the opposing side.

The decisive goals of war also determine its character, as far as the employment of the means of armed conflict is concerned. To achieve such goals the imperialist recognize the necessity of employing the most destructive weapons -- nuclear, chemical and biological, and for delivering them to the object of destruction -- rockets and aircraft, and in the future special space bombing systems. Priority in these means is given to rocket and nuclear weapons. Therefore, a future world war is characterized as a nuclear-rocket war.

The new strategic means of armed conflict have given rise to new terms -- world war has come to be called "global." The past two world wars, in which all large states have participated, were not global since

the military operations did not involve the entire globe and were con-
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ducted in relatively limited areas. The territories of such countries
is the US, South America, Canada, and Australia were not caught up in the
flames of war. At that time the ocean expanses reliably protected these
continents. Now intercontinental ballistic missiles can deliver a
nuclear charge to any point on the globe. Modern heavy bombers can
also carry a death-dealing blow for distances of more than 10,000 kilo-
meters. Because of these means war has become global and intercontinental.
Now oceans are no longer an obstacle. It is impossible to sit it out
behind them during a war.

And if you take into account that now the Pentagon is feverishly
forcing the development of space bombing systems and is studying the
question of using space for military purposes then the global character
of modern war becomes more clear.

Thus, a world war is an armed conflict between socialist and imperi-
alist camps, between the Soviet Union and the US, and is not limited by
its goals, scope and application of means. Everything is used in it,
from a rifle to long range rockets, from a conventional cartridge to a
hydrogen bomb with the greatest power.

Such are the types of wars according to American military figures
and theoreticians. This definition is written in American regulations
and thus, is official. True, it is far from being a full, scientific
definition. And this is to be expected since it is based on philosophi-
cal views which deny the materialistic concept of the development of
society.

by Engr-Lt Col V. ALEKSANDROV
(based on Foreign Press)

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One purpose of the extensive research and investigation of outer space for military purposes being conducted in the US is to launch a great number of various military devices into space. Presently the most important of these devices are all kinds of reconnaissance and navigation satellites. Work is also being conducted on different types of space communication systems, satellites which carry nuclear and rocket weapons, manned space ships, and space stations for military purposes. By 1 January 1964 the US had launched the following number of satellites into orbit on the basis of a few basic projects: 14 Samos photographic reconnaissance satellites, 61 Discoverer reconnaissance satellites, 6 Midas experimental satellites designed to detect ballistic rocket launchers, 7 Transit navigation satellites, and 8 Tiros weather satellites (Flight International, 9 January 1964).

It is interesting to examine certain data published in the foreign press concerning the number of objects and satellites placed in space, including the last stages of carrier rockets and various fragments which are placed in space as a result of rocket launches. For example, 206 fragments of a carrier rocket were placed in space by the launch of the US satellite Transit 4A. According to data from the US space tracking system published in the journal Missiles and Rockets, 24 February 1964, 421 objects were placed in space by 12 February 1964, including 84 US artificial earth satellites, and 330 objects, 175 US and 155 Soviet, had burned up upon reentering the earth's atmosphere. Thus, a total of 751 objects had been launched into space prior to 12 February 1964.

Concerning the use of space for military purposes, intensive work is being conducted in the US to find means of solving the problem of space defense. The goal of space defense research is to develop means to destroy or neutralize enemy military space devices.

The general problem of space defense may be subdivided into three problems: detection, identification, and destruction.

Presently the detection of space devices in the US is done chiefly by special radar stations. When an object radiates electromagnetic energy from radio beacons or telemetry transmitters, its detection and the precise determination of its orbital perimeters may be done rather easily by means which have been in use for a long time. One example of this is the Minitrack system which is used for tracking satellites which carry equipment to radiate radio waves within the range of 108 to 136 megacycles. Space devices may be tracked at long range by the signals from a radio beacon installed in the

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space device. Thus, in 1962 special US radiotechnical stations and radio
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developed by the US Mariner-2 space apparatus for tens of millions
of kilometers until it flew by Venus.

The detection of nonradiating or silent satellites is a much more difficult task. The US includes various military satellites in this category, primarily reconnaissance satellites. The photographic equipment on Samos and Discoverer reconnaissance satellites operates while the satellites fly over enemy territory, but transmission of telemetry information to check their operation and the dropping of containers and capsules of exposed film are done over their own territory by command from special ground stations. Also, the radiation equipment on board Ferrit radio-technical reconnaissance satellites does not need to be operated when the satellites fly over the territory being reconnoitered to register the radiation of enemy radio and radar means.

A special system called Navspacer has been constructed in the US to detect silent satellites. This system consists of three groups of stations spaced at wide intervals from one another (Aviation Week and Space Technology, 26 November 1962). Each group of stations contains two receiving stations with a transmitting station with a power of 50 kilowatts located between them. The system also has one general transmitting station with a power of 560 kilowatts. The operating frequency of the transmitting station is 108,015 megacycles. By using the interferometer method, i.e., comparison of the phase characteristics of signals reflected from the satellites, the angular position of the satellite can be determined with a high degree of accuracy. In 1962 the position of a satellite was determined with an accuracy of up to 0.1 degrees and it has been suggested that this may be increased to 0.01-0.02 degrees.

Powerful radar stations similar to those used in the BMEWS ballistic rocket early warning system are another means of detecting silent satellites. The Haystack station, developed by the Lincoln Laboratory of the Massachusetts Institute of Technology, is one such system. The station has a reflecting parabolic antenna with a diameter of 36 meters. The weight of the antenna system is 150 tons. The operating frequency of the station for tracking nonradiating satellites is 8,050 megacycles and the average power of the radiation is 25-50 kilowatts. It has been calculated that this station may detect an object with a diameter of 20 millimeters at a distance of up to 1600 kilometers.

All of these means are very complex and cumbersome which makes their use in space defense difficult. For example, to determine the orbital perimeters of an unknown object precisely with the Haystack system, 12 hours are required and the satellite must overfly the effective operational zone of the system several times. Large radar tracking stations have very narrow beams, which means that they usually must have preliminary target information and may track only one object at a time. Therefore, such stations may be unsatisfactory when it is necessary to detect a large number of objects.

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After considering the shortcomings of conventional radars, the US developed special multitarget stations with phased antenna arrays and electronic beam scanning for the detection and identification of ballistic rockets and satellites. These MAR and ESAR stations for antimissile and space defense can simultaneously survey large areas of space and track tens of hundreds of targets. They can also provide necessary data for the identification of targets. The first ESAR radar station, the AN/FPS-85, is being assembled at Eglin Air Force Base in Florida and should be put into operation in the first part of 1965. Subsequently the construction of a whole system using stations of this type is planned.

Besides radiotechnical and radar stations, optical means are widely used for the detection of space objects. One such optical means is the Baker-Nunn reflector telescope which was specially developed for this purpose. The diameter of its mirror is 787 millimeters. Good telescopes can detect very small objects at very long range. Thus, only optical means could be used to observe the operation of the engine on the Syncom-2 communications satellite which was necessary to place the satellite in a synchronous orbit. The photograph which clearly showed the operation of this engine was taken when the satellite was in the apogee of its transfer orbit at an altitude of 35,400 kilometers (Sterne and Weltraum, January 1964). Optical means were also used to observe the initial period of the formation of the reflecting belt composed of copper dipoles which were launched on 9 May 1963 to be used as a passive relay in experiments for developing new space communications means in the West Ford project. This project could not be recorded even with the power of very large radio telescopes.

As is known, good optical instruments have very narrow fields of view which makes the detection of objects and space scanning difficult. Their capabilities are decreased sharply during the day and when the object is located within the earth's shadow, and cloudiness generally prohibits their use. An important advantage of optical instruments is their high accuracy which is tens and even hundreds of times superior to the accuracy of radiotechnical means. This allows them to be used successfully for determining the orbital parameters of earlier detected objects.

A single system for checking and tracking space objects called Spadats is presently in operation in the US. Information is fed into the center of this system from radar, radio technical, and optical posts and stations; observatories; and even from amateur astronomers. It has been reported that in February 1963 this system used data which was supplied from 670 points located both in the US and abroad. In December 1962 this system made 159,000 satellite observations. (Aviation Week and Space Technology, 2 February 1963).

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It would be interesting to dwell briefly on certain new means and methods which are being worked out presently in the US for detecting space objects. Preparations for conducting an experiment for tracking satellites with a laser have been underway for over a year in the US. To do this a ruby laser must be used with a wavelength of 6,940 angstroms, a pulse repetition frequency of one hertz, a pulse duration of 0.2 microseconds, and a pulse energy of one joule. The width of the radiation pattern of a laser beam is only 3 angular minutes. The tracking should be done with the S-66 satellite which will have 9 panels of angular reflectors with 40 reflectors on each panel. A modified tracking telescope with an aperture of 45 centimeters will be used to receive the reflected energy. The first S-66 satellite launch took place on 19 March 1964, but was unsuccessful because of a failure of the third stage of the Thor-Delta booster.

The expected effective range of a laser tracking system is 1500 kilometers, its precision of range determination - 3 meters, speed - 15 meters per second, and angular position of a satellite - 30 seconds. It is also expected that photographs of a satellite against a star background can be taken by laser radiation. Then, the angular position of a satellite may be determined with a precision of up to 2 angular seconds (Electronic News, 29 April 1963).

Another very new method for detecting satellites is based on the theory that the flight of a satellite at rather low altitude must cause ionospheric disturbances which are accompanied by radio emissions. It has been reported that this theoretical conclusion may be at the base of the development of a passive detection and tracking system which needs no radiations from ground objects. According to the foreign press this theoretical conclusion was subjected to experimental testing in 1963. (Electronics, 12 April 1963)

Widespread attention is being paid in the US to the development of means and methods of detecting space objects before they are placed in orbit. Locally the problem here is to detect the launch of the carrier rocket track it over the active portion of its trajectory to derive preliminary for warning and giving target data to a system for outer space control. involves essentially the same problems faced by antimissile systems for detecting launches of combat rockets and identical means are being used for the solution.

The available means which have been developed abroad for the solution of this problem can only approximately determine the destination and character of the trajectories of launched objects. These means include special radar stations, acoustical detection systems, and finally, space systems utilizing such satellites as Midas.

As is known, ordinary radar operating in the centimeter range can detect objects only when they are above the horizon. Therefore, these stations must be moved as close as possible to rocket launch sites if they

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are to be used to detect rocket and satellite launches. This project has long been devoted to the development of radar capable of detecting rocket launches beyond the radio horizon. This system uses the principle of return incidence sounding, i.e., the sequential reflection of sounding radio beams from ionized layers of the atmosphere and the surface of the earth. It has been reported that an experimental station of this type is operating in the US on a frequency of approximately 20 megacycles and its expected operational range is about 3,800 kilometers (Interavia Air Letter, 23 April 1963). Stations using return incidence sounding have a significant error in azimuth determination and can only roughly determine the range to the point of a rocket launch.

The US has spent 225 million dollars on the development of the Midas space detection system. After a halt of approximately a year which was necessary for the development of new onboard apparatus, two satellites were launched in 1963 which detected Minuteman, Titan, and Atlas rocket launches from the US Atlantic and Pacific rocket testing ranges (Missiles and Rockets, 3 February 1964). In spite of this costly success, the US had to stop further development of this system because of its excessive complexity and cost. According to US calculations, an effective system may be developed no earlier than 1969 as a cost of 2-3 billion dollars since the annual cost of this system would be approximately 100 million dollars.

The possibilities of detecting rocket launches beyond the horizon have been increased by the discovery of the radio emissions of the exhaust gas streams of engines. It has been noted that there are radiations from both the exhaust stream itself, called the primary radiation, and from the shock wave formed by it, called the secondary radiation. Supposedly possibilities are greater for detecting rockets by the secondary radiation or its associated effects. In 1963 the US Air Force concluded a contract with the Raytheon Company to develop the Red Mill system to detect rockets on the powered portion of their trajectory by the change in the critical frequency of the ionosphere caused by the stream of exhaust gases from the rocket engines.

There is still another method for detecting rocket launches which is based on the use of very low frequency sound waves, i.e., less than 15 hertz, which are produced by the launches. These waves are usually called subsonic waves. They are caused by powerful man-made and artificial atmospheric disturbances and spread over very great distances. They are caused by hurricanes, earthquakes, magnetic storms, ocean waves, nuclear explosions, and the operation of powerful rocket engines. Each source of atmospheric disturbances conforms to a determined specter of subsonic oscillations, for example an earthquake develops waves with frequencies from 2.5 to 0.005 hertz, hurricanes from 0.08 to 0.02 hertz, and ocean waves up to 0.1 hertz. The difference in the oscillation spectrum and

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the waves of earthquakes, permits the waves produced from natural causes to be distinguished from the waves of man-made phenomena.

Such waves with frequencies lower than 15 hertz cannot usually be heard with the human ear, but they can be recorded by comparatively simple and inexpensive equipment. The US Head Bone system detects rocket launches with a very sensitive barograph (Interavia Air Letter, 10 January 1964). A single subsonic station may only approximate the direction to the source of a disturbance, but several of these stations can determine its location by taking its bearing and using the method of triangulation. Each station has at least 4 sensitive elements located at intervals of several hundred meters from each other. The direction of the source of the subsonic oscillations and their speed are determined by comparing the moments when they are detected by each element.

Concerning the range of this system, the subsonic waves caused by the strong earthquake in Montana on 18 August 1959 were recorded by a station of the National Bureau of Standards in Washington at a distance of 2,000 miles or 3,200 kilometers and a tornado in Oklahoma was recorded by the same station in May of 1960 at a distance of 1200 miles or over 1,900 kilometers. It has been reported that the Head Bone system can not only record launches, but even the takeoff of jet aircraft.

It has been reported in the press that in comparison with other methods of detection the subsonic method has two important shortcomings. It can be used only during the initial portion of the rocket's flight before it reaches an altitude of 80 kilometers because subsonic waves spread only in the lower and rather dense layers of the atmosphere. However, much valuable information for determining the speed and direction of the flight of a rocket can be derived from the knowledge of this small portion of its flight.

The second shortcoming is that subsonic oscillations spread with the speed of sound which is approximately 1200 kilometers per hour at sea and in particular in what is called the ozonosphere, which is the layer of the atmosphere which contains a great amount of ozone, this speed is much greater. At a conference of the American Acoustical Society in May of 1962, a group of physicists stated that wave guides for sound waves in which the speed and range of the spread of sound waves were sharply increased had been discovered at altitudes of up to 50 kilometers and between 50 and 130 kilometers (Electronics, 1 June 1962). It is interesting that the effect of these wave guides depends on the time of the year, for example in winter sounds spread more quickly to the east and in summer to the west.

Installations of the Head Bone system have been set up in countries allied with the US and contiguous to the territory of the USSR. They are used mainly to record rocket launches from Soviet test ranges. In view of the shortcomings mentioned above, this system can hardly provide timely

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warning of the launch of a rocket. The information necessary to record the launches of space objects which are in orbit for a much greater period of time than is required for the flight of a rocket, and to record unsuccessful launches when other means cannot detect the flight of the satellite or rocket.

Identification may be done by both ground and space means. Essentially the same ground means which are used for detecting space objects are also used to identify them. However, it must be noted that the task of identification is more complex and presupposes reliable detection. The basis of identification is the constant knowledge of the space situation and the maintenance of a detailed catalogue of all space objects. Only when these conditions have been met can each new object be differentiated from those which have been placed in orbit earlier. However, this is not enough to draw a conclusion on the purpose and characteristics of detected objects. To establish only that an object is in space and determine its orbital characteristics are insufficient for identification. Some deduction must be reached concerning its shape, size, weight, volume, and most important, its equipment, i.e., the presence or absence of nuclear weapons or reconnaissance apparatus.

When radar is used to make identifications, the signal reflected from the object is analyzed and compared with typical signals which have been recorded from known space objects. Thus, basically the "signature" of the space object is used to produce information on the shape, whether it is sharp or streamlined; its movement around the center of its mass, whether it is stabilized or rolling; and the size of the object. This is the method employed in the US Nike-Zeus antimissile defense system which uses a special radar station for this purpose. During experiments at the White Sands testing range in 1963, three radar stations identified warheads of intercontinental ballistic rockets at a range of approximately 1600 kilometers.

The results of observations made with optical means are also used to determine the shape, size, and weight of unknown satellites (Flight International, 12 December 1963). Useful information concerning the shape of a satellite can be derived from its luminence in the sunlight. For example, a spherical satellite will produce a constant luminence whose brightness depends only on the position of the satellite in relation to the sun, but the last stage of a carrier rocket which is almost cylindrical in shape has a different character of luminescence. The latter's luminescence is changed periodically in accordance with the frequency of the rolling of the cylinder in relation to its transversal axis. The period of the brightness fluctuation for an Agena rocket is approximately 10 seconds, but for an Altair rocket which is the last stage of the Thor-Delta and Scout carrier rockets, it is 4 seconds. The luminescence of a prismatic satellite, which has speels of solar elements installed on its body, appears as short brief pulses. The size and weight of a satellite are determined by its brightness. First the diameter is approximated and then the weight

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very crude and may produce large errors, since the specific weight of known satellites fluctuates greatly. Still another method is used which is based on the change in the satellite's orbit caused by the breaking effect of the atmosphere.

These methods of determining the size and weight still produce only rough approximations, but they are useful in differentiating between satellites, carrier rockets, or small fragments. The results of the evaluation of the size and weight of the upper stages of the Soviet Cosmos satellites which were placed in orbits with inclination angles to the equator of 49 degrees, will serve to illustrate. According to data published in the English journal Flight, 7 May 1964, which were based on the results of optical observations and comparisons with US rockets, the following most probable characteristics were produced for analysis of these space objects: a length of 13.9 plus or minus 1.3 meters, a diameter of 2.4 plus or minus 0.3 meters, and a weight of 2,550 plus or minus 550 kilograms. As is evident from these data, the basic geometrical dimensions were estimated with an accuracy of up to 10 percent and the weight with an accuracy of up to 20 percent.

Special satellites or manned ships, equipped with necessary apparatus and having the ability to approach objects under surveillance, are space means of identification. In 1960 the foreign press reported that the US Westinghouse Company was working on a project for such a satellite. In 1963 the US Air Force announced a competition to study the possibilities of the development of piloted and pilotless satellites to identify space objects, including the following: means for searching, detecting, and tracking unknown objects, including infrared and ultraviolet devices, radar, lasers, etc; onboard equipment to derive and transmit to the earth television and infrared depictions of these objects; and instruments to determine their mass.

The firms taking part in the competition were to have presented their suggestions prior to 17 June 1963. It was reported that similar contracts had already been concluded with RCA for a pilotless satellite. Also, a contract had been concluded to study the possibilities of using the two-place Gemeni spaceship for the identification of space objects.

The Saint project has been the main space inspector project in the US since 1959. However, this project which includes both piloted and pilotless versions is still in the primary stage of development. Moreover, it has been reported that it was completely reviewed in 1963 and that a total of approximately two million dollars has been allocated to this project for the 1964-1965 fiscal year. This money is intended only to develop interception and inspection equipment for co-orbital flight, i.e., when the interceptor is placed in the same orbit as the satellite under surveillance. Thus, the US has not essentially developed any practical space means of identification.

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In the opinion of the US the destruction of military space objects should be accomplished after the careful analysis of their purpose and the possibilities of causing their mechanical failure, since destroying them may result in the formation of many fragments which would complicate reliable control of the space situation. An ideal solution to this problem is considered to be the installation of retrorockets on such objects to bring them down into the thick layers of the atmosphere to burn or to land in selected areas. Earth-to-space and space-to-space rockets with small nuclear warheads or conventional means of destruction and lasers are considered to be possible means for destroying space objects.

The US was forced to consider that the explosion of nuclear weapons in space can interfere with the operation of many types of communications and the formation of an artificial radiation belt which may put the equipment of other satellites out of order and interfere with flights of their own piloted spaceships. It was reported in the journal Missiles and Rockets, that the Advanced Research Projects Agency of the US Department of Defense in the fall of 1963 stated that it was feasible to develop ground-to-space weapons with nonnuclear means for the destruction of satellites. The first flights test of this weapon are supposedly to take place over Johnson Island in the Pacific Ocean at the end of 1965 or the beginning of 1966. A Thor-Agena D rocket should be used for the interceptor satellites, guidance to target should be done by ground command, and the final stage of the interception will use a radar homing system. The target may be destroyed by using steel balls or passive means to interfere with the heat regime or make the solar batteries of the satellite inoperative. Two launch sites for four rockets and other installations are being constructed on Johnson Island in preparation for the testing of this weapon.

The use of lasers in antimissile and space defense is considered possible in principle, but not practical at the present level of technology. However, in spite of this pessimistic evaluation, intensive work is being done to perfect lasers with the intention of developing future ray weapons.

The basic shortcomings which must still be eliminated for the development of such a weapon are the low efficiency coefficient and the large size and weight of ordinary lasers combined with the necessity of providing them with sources of energy and booster attachments. To overcome these shortcomings, extensive research work in which over 400 organizations and firms are taking part is being conducted in the US. Approximately 30 million dollars was spent on the development of laser technology in the 1963-1964 fiscal year. It has been reported in the foreign press that new methods for boosting optical lasers are already in use which allow their efficiency coefficient to be increased from 5-6 percent up to 50-80 percent. Lasers on semiconductor diodes are used for this purpose. Solar beam commutators and nuclear energy power plants may be used as energy sources for future lasers on military space devices.

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It has been reported in the press that modern lasers can produce a pulse energy of approximately 350 joules and burn a hole in a copper sheet with a thickness of 6.4 millimeters. The use of laser weapons on the Saint-2 manned space interceptor and in antirocket defense and space defense space stations is considered most probable. The use of powerful lasers from ground stations located on the tops of mountains to decrease the loss of energy in the atmosphere is not excluded.

The possibility of using artillery weapons for space defense and antimissile defense is being discussed in the foreign press in connection with work being carried on in the joint US-Canada Harp Project. Research has shown that artillery weapons may be used to fire small nuclear charges at ground targets at ranges of over 160 kilometers, to launch small guided rockets over intercontinental distances, to place 5-10 kilogram satellites in orbit, and to destroy enemy ballistic rockets and satellites in flight. Thus, the possibility of developing an antimissile and space defense system which does not use guided rockets or space means, but conventional tube artillery is being considered.

The Harp Project was begun in 1962. A total of 50,000 dollars was spent on it the first year, but now this sum has reached 1 million dollars per year. The firing is done from heavy naval 406-millimeter guns. At first the subcaliber missiles, Martlet-1 and Martlet-2 with a diameter of 203 millimeters and a weight of 136 kilograms and a diameter of 127 millimeters and a weight of approximately 80 kilograms respectively, were fired to altitudes of 55 kilometers and 104 kilometers respectively. Thirty firings of the Martlet-2 missile were planned for 1964 using new powdered charges which would allow an initial velocity of approximately 1800 meters per second to be achieved to send the missile to altitudes over 100 miles or 160 kilometers.

In September 1963 firings were begun using Martlet-3 rocket boosted shells which have a diameter of 178 millimeters and a weight of 68 kilograms and solid propellant rocket engines containing a powdered charge of 25 kilograms and producing a specific impulse of 200 seconds. The missile carries a payload of 11 kilograms including a small telemetry transmitter. The initial velocity of the missile is approximately 1,000 meters per second and it is accelerated at approximately 6,000 meters per second. The solid propellant charge is ignited at an altitude of approximately 9 kilometers 14 seconds after firing and burns for 5 seconds to give the missile an additional speed of over 900 meters per second. It has been reported that the telemetry transmitter of the missile withstands the huge overload of the firing and that signals from it can be received up to an altitude of 90 kilometers (Missiles and Rockets, 27 January 1964). This, in itself, has shown the practicality of the possible development of radioelectronic equipment for guiding reactive missiles of this type.

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A Martlet-3B missile with a diameter of 203 millimeters and a weight of approximately 100 kilograms is being developed which, according to calculations, can deliver a 21 kilogram payload to an altitude of approximately 320 kilometers. Tests are being conducted with a solid fuel rocket engine with a diameter of 406 millimeters which is intended to launch a payload of 45 kilograms vertically from cannons to an altitude of 160 kilometers or 450 kilograms to an altitude of 90 kilometers.

The work being conducted in the Harp Project is the first step toward determining new possibilities for the use of tube artillery. Other information concerning the development of practical antimissile or space defense systems of this type have not yet been published.

Finally, an effective space defense system has not yet been developed abroad. In spite of successes achieved in the development of means of detection and improving the identification of space objects, a lag has been noted in the development of active means of defense. Prolonged scientific research and optical design work are necessary for a practical solution to this problem.

SCIENTIFIC CLASSIFICATION OF MILITARY LITERATURE

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Modern military affairs, in general, and military science, as its theoretical part, are very complex. The extreme variety of military equipment and the abundance of military knowledge, without which correct resolution of problems of national defense is impossible, raises the role of strict and accurate scientific classification of military affairs, both for mastery of it and for scientific research.

Problems of classifying military science (by subject, content, and component parts of military science) have recently been debated in the military press. It must be said that there is no unified opinion regarding these problems. Moreover, it ought to be pointed out also that scientific classification does not remain unchanged -- it develops in accordance with the development of military affairs.

The classification of military literature (including periodical publications) must reflect the state of military science and military affairs at a given time. Therefore, library classification is examined and supplemented from time to time.

Military literature has always been systematized according to various classification tables. For example, in the State Library imeni Lenin it was systematized prior to 1954 according to tables compiled by the military department in the years 1932-1936, and later according to working variants of the tables compiled by coworkers in the military department of the library. Naturally, these classification tables did not make it possible to fully cover the variety of literature on military science and military affairs. On the whole, there was no unity in library classification of military literature; often there was evidence of amateurish work. A need arose to develop a single, scientific, Soviet library classification which would correspond to the modern content and classification of military science.

The military department of the USSR State Library imeni Lenin worked in recent years on the compilation of a new classification of literature in the "Military Science and Military Affairs" section. The plan for a new classification was debated several times in meetings of library workers of military academies and representatives of central military institutions.

The compilers of the library-bibliographic classification were confronted with many difficulties. It seems to us that they generally handled these difficulties quite well. (Bibliotечно-Bibliograficheskaya klassifikatsiya. Tablitsy dlya nauchnykh bibliotek (Library-Bibliographic Classification, Tables for Science Libraries), Edition XVIII, Section on Military Science and Military Affairs, Published by the USSR State Library imeni Lenin, 1963)

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A generally accepted classification time was made on the basis of the library classification of the "Military Science and Military Affairs" department (S. N. KOZLOV, M. V. SMIRNOV, I. S. BAZ', P. A. SIDOROV, O Sovetskoy voyennoye nauke (On Soviet Military Science), Voenizdat, 1964.) However, library classification has its own peculiarities, caused particularly by the practical use of a book in library work (arrangement, storage, compilation of a systematic catalogue, etc). Therefore, classification of military science and library classification are not identical.

The main branches and divisions of Soviet military science in library classification were divided into independent sections: the general theory of military science, the theory of military art, military-historical science, military geography, and military-technical sciences. Theories concerning the training and education of troops and military administration, since they are closely linked with the building and training of the armed forces, were included in the "Armed Forces" section.

The "Military Science and Military Affairs" department begins with the section "Studies on War and Armies." Although the latter is not formally included in military science, we believe it was rightfully included in this department since it forms a theoretical and methodological base for military science and without it correct resolution of any military problem would be impossible.

"The General Theory of Military Science and the History of Military Thought" section arouses only one observation: the subsection "Military Doctrine" should not have been included in it. It is well known that military doctrine is not an integral part of military science. "Military doctrine...exists alongside military science, in close association with it" (R. Ya. MALINOVSKIY, Bditel'no stoyat' na strazhe mira (Vigilantly Stand on Guard of Peace), Voenizdat, 1962, page 16. In addition to its technical aspects, which are mainly based on conclusions of military science, military doctrine also has a political side which goes beyond the realm of military science. "Military doctrine is worked out by and determined by the political leadership of the state." (ibid., page 16, 17) Military doctrine plays a leading role for military science. Therefore, we believe it would have been more correct to include "Military Doctrine" in the "General Section" (in the subsection "Leading and Legislative Materials of the USSR on Questions of Military Science and Military Affairs").

The theory of military art, in addition to its three component parts (strategy, operational art, and tactics), contains general principles relating to all these parts. Some literature examines these general principles. Therefore, it seems to us it would have been more efficient in classifying the theory of military art to have included a subsection devoted to these principles in front of strategy.

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It is known that in strategy and tactics there are sections on the employment of separate branches and arms of the armed forces. The problem always arises in classifying as to which is preferred -- types of military operations or branches and arms of the armed forces. For example, where should operational employment of armored troops be found -- in subsection "Operational Art" of section "Theory of Military Art", or in subsection "Armored Troops" of section "Armed Forces"? The compilers chose the latter and we believe correctly so, especially if you consider the classification scheme will be used in specialized military libraries which have literature on corresponding branches and arms of the armed forces in stock.

We would like to express doubt over the advisability of using the term operational-tactical employment synonymously with the term tactics (pages 152, 167, 173).

Front and army operations were for some reason or other placed in the subsection "Operational Art" (page 49). What if an operation is conducted by several fronts or armies? Where would it be found? Presumably, operations like these are the subject of research on operational art. Therefore, we feel that operations should not be limited only to front and army scales.

Classification of the subsection "Offensive Operations" into breakthrough, encirclement, meeting engagements, operational pursuit, and operations for forcing water barriers (page 50) raises some doubts. We think that if the breakthrough is singled out, then development of the breakthrough should also be singled out as the second most important stage of an operation. Development of the breakthrough (especially with participation of mobile sovedineniya) was given a great deal of consideration in the past. It remains a problem even today. A considerable amount of literature is devoted to it. Incidentally, we think it would be more correct to speak not about the breakthrough, but about attacking the enemy on defense or about overcoming the defense which can be accomplished in more ways than a breakthrough.

Furthermore, encirclement operations were singled out but operations aimed at slicing enemy groupings deeply on several axes (more characteristic in modern conditions) were not singled out.

Almost the same thing can be said with respect to classification of the subsection "The Offensive" (page 51). It seems inexpedient to us to separate the counteroffensive and the offensive since the former is a special type of the latter and should have been included in it as a component part.

The compilers of the Tables divided combat operations on coast lines carried out by the Navy into two groups. Combat operations on the whole and offensive operations were placed in the section "Theory of Military Art" (page 51) and in sections on the separate branches and arms of the armed forces (page 55), but defense of the Navy" (page 214). We find poor justification for this division.

In the first place, the concept of shore defense does not mean a method of operation, but the forces and means of defense. Defense of coast lines includes the method of operation of various forces and means.

In the second place, defense of coast lines, which is primarily accomplished by ground troops, cannot be indentified with shore defense, which covers only the operations of forces of the navy.

In the third place, as far as joint operations of naval forces are concerned, participation of naval forces will be greater in offensive operations, in our viewpoint, than in defensive operations, which consequently gives it little right to be included in the "Navy" section.

In the fourth place, defense of coast lines will very often have a place in offensive operations in littoral axes or with the approach of troops to the coast line. Therefore, to separate it and place it in the "Navy" section is not advisable.

On the whole, the section "Theory of Military Art" was correctly organized. However, in a number of places the compilers permitted the pre-atomic theory to prevail. Accordingly, they did not always take into consideration those changes which have occurred in military art in connection with the appearance of nuclear-rocket weapons. If the nearest prospects for the development of military theory are taken into account, then it must be said that correction of the Tables on a number of questions is unavoidable.

We would like to express two observations concerning the "Military-Historical Science" section.

First, it seems to us that classifying the history of wars and military art of the USSR into three period, 1917-1937, 1938-1958, and 1959 to the present, is too general, especially for the history of military art. Disregarding the first period, which could be divided into a number of stages, under such a general classification the most important stage in the development of military art, acquisition of nuclear, and subsequently, rocket weapons (1954-1957) in the armament of the Soviet Armed Forces, is not designated.

Secondly, the subsections of the three periods mentioned above are devoted only to wars and military conflicts. But military art progresses between wars also. For example, a large number of research work came out

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on the Tables which is not connected with writings or generalizations on the experience of specific wars, will be included. It seems to us that the Tables should have included subsections devoted to the history of military art between wars, when troop exercises and maneuvers served as practice for military theory.

We want to make an observation concerning the "Armed Forces" section. We feel that the division of the history of the USSR Armed Forces (page 101) into periods was too general. It corresponds to the historical periods of our government but it does not reflect specific details of the qualitative stages, especially those connected with the technical re-arming of troops, in the development of the armed forces. Even the most important stage in the development of the Armed Forces, well known under the title "the revolution in military affairs," is not reflected in this division into periods.

As far as military technology is concerned, the division of it into two groups in the Classification is most convenient. Only general works on military technology were put in the "Military Technology" section and the main mass of literature was concentrated in appropriate sections of branches of the armed forces. Moreover, a large amount of literature on the broadening use of natural sciences in military affairs will be accumulated in the general section of "Military Technology."

We feel it is also necessary to say something about the critical observations and opinions expressed in the press concerning the book under review. For example, we do not share the point of view of ZAKHAROV and PANOV, who proposed including studies on war and armies in the "General Theory of Armed Conflict." (G. P. ZAKHAROV and A. A. PANOV, O skheme biblioteknoy kalssificatsiya po razdeul Voyennaya nauka (On the Scheme of Library Classification on the Military Science Section), Works of the library of the USSR Academy of Sciences and the Main Library of Social Sciences of the USSR Academy of Sciences, Vol VII, USSR Academy of Sciences Publishing House, 1963, page 25).

As is known, Marxist-Leninist studies on war and armies include questions of the origin and essence of wars and the relationship of war and economic, war and politics, war and technology, and also the role of the popular masses and military leaders in war. Armed conflict is only one specific aspect of war as a social phenomenon. Therefore, literature on Marxist-Leninist studies on war and armies should not be subordinated to the general theory of armed conflict.

Furthermore, comrades ZAKHAROV and PANOV opposed the complex section "Separate Branches and Arms of the Armed Forces" and recommended putting literature on branches and arms of the armed forces in the sections "Theory of Military Art" and Theory of Building the Armed Forces." This variant

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is possible, of course, that this is inadvisable from the point of view of library practice. Complex sections reflecting literature on all questions relating to a given branch of arm of the armed forces are first of all convenient for the reader. Moreover, they are absolutely necessary for specialized military libraries which collect literature on one or another branch or arm of the armed forces.

Finally, we consider the recommendation of ZAKHAROV And PANOV regarding classification of literature on questions of military technology to have little justification. They recommended dividing this literature into the sections "Theory of Military Art" and "Theory of Building the Armed Forces," and they did not mention military-technical sciences at all. This recommendation does not correspond to the modern content and classification of military science.

In conclusion we would like to emphasize once again the importance of the Tables of library-bibliographic classification for military scientific work, which is confronted with very responsible tasks at the present time. Military libraries must actively study and put into practice the work of the new library-bibliographic classification. It would seem that with the publication of Tables uniformity will be achieved in literary indexes, and various directories, etc., published by military libraries, military educational institutions, and scientific institutions. On the whole, military-bibliographic work in the armed force will rise to an even higher level.

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